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ORIGINAL ARTICLES

THE EFFECTS OF VACCINE THERAPY IN JOINT TUBERCULOSIS.*

EDWARD H. OCHSNER, B.S., M.D.

Attending Surgeon to Augustana Hospital; Adjunct Professor of Clinical Surgery, University of Illinois.

CHICAGO.

In considering the effects of vaccine therapy on tubercular processes in joints, it is manifestly impossible to determine their exact influence, because we would not be justified in discarding the other therapeutic agents which have proven themselves efficient in the treatment of this condition. However, I believe that we will be able to show that vaccine therapy has a very decided and, if properly applied, beneficial effect upon tubercular joints and can now be looked upon as a valuable adjunct in the treatment of joint tuberculosis. The question of sufficient suitable food, plenty of fresh air and prevention of secondary infection having been fully covered in a previous communication, I will confine myself in this paper to a consideration of the influence of proper immobilization and vaccine therapy upon the progress of the disease with special reference to the ultimate mobility of the joint.

I take it for granted that this audience is thoroughly familiar with the principles of vaccine therapy as taught and practiced by Wright, and consequently will not go into this detail further than to say that, while I agree with the critics of Wright that the opsonic index can not be determined with absolute accuracy, I believe that a careful, conscientious laboratory worker can ascertain such variation in the opsonic index as is essential to avoid the administration of such large or frequently administered doses of vaccine as would cause too great a depression of the opsonic index, or to administer a new dose during a pronounced negative phase. This, after all, I consider the most important reason for a careful reading of the opsonic index.

* Read before the Chicago Medical Society, December 9, 1908. For discussion see page ——.

If patients with joint tuberculosis come to the surgeon sufficiently early, if they are placed under proper hygienic conditions, if suitable measures are adopted for the prevention of secondary infection, if the joints are perfectly immobilized for a sufficient length of time, and if vaccine therapy is instituted under control of the opsonic index, I believe that the great majority of cases will secure perfect or nearly perfect functional and anatomic results. Many teachers have taught and are still teaching that long continued immobilization of an inflamed joint favors ankylosis. This teaching is theoretically untenable and contrary to clinical experience, as I believe we will be able to prove.

Volkman taught us, and I believe correctly, that the primary lesion in joint tuberculosis is usually located in the bone and that in the majority of cases the joint involvement is secondary. Clinically the first thing that is usually noted is a moderate degree of pain, followed in a varying period of time by an effusion into the joint and an attempt at immobilization of the joint by the surrounding muscles. The two signs, effusion and rigidity, should long ago have taught us that when an inflammatory process exists in a joint our efforts should be directed toward preventing contact and friction between the opposing articular surfaces. This can best be accomplished by sufficiently prolonged absolute immobilization of the joint. If active and passive motion is permitted, or, as is sometimes done, even encouraged, the endothelial coverings of the joint cartilages are very apt to be damaged. If two opposing surfaces become thus abraded, we are almost sure to have fibrous ankylosis. If active and passive motion is vigorous enough and prolonged enough, the cartilage also will become destroyed in places, and if opposing surfaces of the joint cartilages become destroyed bony ankylosis is sure to follow. Proper immobilization with undisturbed joint effusion will prevent this undesirable termination in a very considerable per cent. of cases, especially if it is further aided by vaccine therapy.

For the past two years we have been using vaccine treatment as a routine procedure in all of our cases of tuberculosis for whom it was convenient to remain in or near the city, and rather early in our experience it seemed to me that tubercular cases thus treated reacted more quickly, and in joint tuberculosis it appeared that when the last cast was removed ankylosis of the joint was less common and less severe. It is, of course, too early to reach absolutely definite conclusions on this point, as many of the cases are still under treatment and the final findings can not yet be recorded. However, the greater mobility of the joints was sufficiently pronounced to attract my attention, and I have consequently since that time made a rather critical study of the patients with special reference to this point, and naturally I tried to discover what the reason or reasons might be for this difference in the healing process.

About this time I had three very interesting cases of bilateral tubercular cervical adenitis. In each case I did a radical operation on one side, then placed the patient on vaccination treatment for from six to eight weeks and then operated on the other side. In each case I noticed the following facts: The glands first operated upon had their ordinary

gland capsule, but, in addition, a very considerable deposit of pericapsular connective tissue, the vascularity of the parts being about as is usually found in these cases. When operating the second time quite a different condition was found. While the gland capsule was about the same as at the first operation, the periglandular connective tissue had almost entirely disappeared, the glands were very much more freely movable and the surrounding tissues were much more vascular than they had been at the previous operation—so vascular, in fact, that there was general capillary bleeding with every cut of the knife or snip of the scissors, interfering very seriously with rapid dissection. I have since observed the same condition twice—in fact, in all cases, five in number, in which there has been a considerable interval of vaccine treatment between the first and second operation.

If the above observation is correct and if it will be substantiated by future cases and other observers, it will explain why there is less ankylosis in cases of joint tuberculosis treated with vaccination than is the case if treated by the ordinary method. We have long been taught that tuberculosis is cured by a process of exclusion, because this is the process we have been able to observe and follow as healing has progressed. So far as I know, other methods of healing have not been recognized, and yet it seems more than probable that there are other methods, for in the perfect healing out of a tubercular peritonitis it is hard to conceive that it has all been a process of exclusion and sclerosis. To further substantiate this view, I might cite two cases of tubercular cervical adenitis which had received no vaccination treatment in which there was little or no periglandular connective tissue found at the operation.

The healing process of tuberculosis is usually described as a proliferation of fixed tissue cells, which later develop into mature connective tissue which in contracting slowly constrict and ultimately obliterate all the blood vessels, resulting in fatty degeneration, then in necrosis and finally ending in calcareous deposits. In other words, the tubercular process is walled in and the tubercle bacilli starved.

The process of healing, which we believe we have observed here, is evidently entirely different; it is fundamentally a phagocytic process, a process of vascularization instead of sclerosis; it is a tearing down of the connective tissue wall, giving the phagocytes an opportunity to destroy the tubercle bacilli. The two processes may be likened to the two recognized methods of warfare, one a siege with the cutting off of supplies and provisions and the ultimate starvation of the garrison, and the other the destruction of the walls of the fortress with heavy artillery with a final charge and a hand-to-hand combat with the garrison.

I do not wish to consume your time with a detailed report of the cases thus treated, nor even with a statistical summary, but will briefly give the history of two cases, one a simple tuberculosis of the knee, the other a tuberculosis of the knee complicated by mixed infection. In this way I hope to be able to emphasize and elucidate some of the points above brought out.

H. H., male, age 17, tailor, first placed himself under my care May 11, 1907, with a history of having been well to the age of fourteen, when he fell, injuring right knee, experiencing slight pain, but had no further trouble until four months later, when knee became swollen, painful and motion restricted. Shortly after this, knee was aspirated, injected and apparently rather ineffective attempts made to immobilize same. Later again injected, finally put on Bier's treatment. When first seen by me, general nutrition fair, weight 145 pounds, examination negative except that right knee was greatly swollen, boggy, extremely painful on slightest passive motion, active motion impossible, held rigid at an angle of about 140, unable to bear weight, temperature varying during the course of the next week between 98 3/5 and 100 3/5, pulse between 80 and 120, opsonic index .6. As it was impossible to straighten the knee, the patient was anesthetized, the knee, placed at an angle of 175, plaster-of-Paris cast applied from the malleoli to the tuberischium, vaccination treatment instituted, after a few days patient allowed to get up, cast left in place for four months, at the end of which time the patient had gained so much in weight that the cast had to be changed. The second cast was left in place eleven months. When this was removed, patient's general health excellent, weight 177 pounds. On inspection, knee perfectly normal, straight, active motion about 20, passive motion 30, opsonic index during the last year having varied between 1.1 and 1.7.

J. B., male, age 34, blacksmith, came under my care May 21, 1907. The essential points of his history are that 28 months previously, after an illness described by him as la grippe, both lower extremities from the knees down to the toes became swollen. After the swelling subsided the patient noticed that the right leg could not be fully extended. This limitation of motion had persisted ever since. Fifteen months before his admission a swelling developed on the outer side a little below the right knee. Eleven months before admission this abscess was incised and drained, three months later this was done again, drainage continued for three months and intermittently from that date until the day of admission. On admission the patient was found considerably emaciated, the right knee was markedly swollen, slightly flexed, rigid, but not completely ankylosed, active motion impossible, slightest attempt at passive motion caused excruciating pain, leg and foot swollen, drop ankle, several sinuses discharging pus, temperature during the succeeding weeks varying beween 97 4/5 and 104 F., pulse 66 to 128, opsonic index on admission .6. The patient was anesthetized, the right lower extremity immobilized in a fenestrated plaster-of-Paris cast with the knee at an angle of 175 and the ankle at 85, patient put to bed and vaccination treatment instituted. As soon as the extreme tenderness subsided he was allowed to sit up, later to walk with crutches with a high sole under the good foot, and finally when the tenderness in the knee joint had entirely disappeared he was allowed to walk with ordinary shoes and a cane. The patient rapidly gained in weight and strength, his temperature and pulse became normal, and when the cast was removed on Aug. 20, 1908, the right lower extremity, except for some atrophy of the muscles, made a practically normal appearance, the sinuses being entirely healed and about 30 passive motion being possible without the slightest pain or discomfort.

I feel sure that you will agree with me, even from these short histories, that here we had two very unfavorable cases and that the results are certainly most satisfactory. If these were the only cases thus treated they would prove very little, but we have had quite a series of similar cases involving practically every joint of the extremities, in which we have secured similar gratifying results.

In the treatment of joint tuberculosis, our chief attention has been directed to the question of mortality. This is as it should be. We have not paid too much attention to this question, but we have paid very much too little to the question of morbidity. It is in order to give this phase

of the subject its due prominence that I have devoted this paper more especially to the effects of vaccine therapy on the tubercular process in the joint itself. I am fully convinced, however, that when properly employed in a large series of cases vaccine has a threefold effect: First, it reduces the mortality; second, it hastens convalescence, and, third, it improves the ultimate functional results.

In reference to mortality I believe that, while practically every case of joint tuberculosis which comes to a competent surgeon reasonably early can be cured, I am convinced that in the past two years we have had several late neglected cases get well which would have succumbed without the aid of vaccine therapy.

The second question, the period of complete disability, is a matter of very great importance. Many of these patients are poor and can ill afford a long siege of sickness; every week or month that the illness can be shortened means much to them. Of still greater importance is the question of ultimate functional result, because most of these patients are young, and if the result is unsatisfactory they will have to get along with their deformity, often work with a very considerable handicap for many years, while if the result is good they will be able to meet their competitors on an equal footing.

Barring the mental anguish and the physical pain which each case involves, the last two items, the period of convalescence and the ultimate functional result, are purely questions of personal and public economics. It is our duty to shorten the illness as much as possible and to give these patients the best possible joints, in order that they may be of the greatest use to themselves and to their fellow-men.

In conclusion, I wish to state that I am very well aware of the fact that a relatively small number of cases covering a short period of time can not furnish absolutely conclusive evidence, but the experience we have had thus far has been so uniform that I deemed it of sufficient importance to report thus briefly.

Up to a few years ago we were very well satisfied if we were able to bring a case of simple tubercular arthritis to a successful healing of the tubercular process without surgical intervention, and we were quite satisfied if we accomplished this result with ankylosis, providing the limb was ankylosed in a useful position. Just recently I was informed that one of the most prominent continental orthopedic surgeons still considers this the ideal for which we are to strive in these cases. A larger joint with mixed infection sometimes resulted in the death of the patient, often in the loss of the limb and very commonly in persisting sinuses. I believe that now we can practically always save the life and limb of such a patient and sometimes, as in the last case above cited, even secure a useful joint. In tubercular joints uncomplicated with mixed infection, we can, if the patients come to us sufficiently early, secure perfect functional and anatomic results in the great majority of cases.

710 Sedgwick Street.

THE MOTILITY OF THE STOMACH, A VALUABLE FACTOR IN THE DIAGNOSIS OF GALLSTONE DISEASES.*

MILTON R. BARKER, M.S., M.D.
CHICAGO.

Moynihan makes the following observations: "It is an undoubted fact the commonest manifestations of the presence of gallstones is never referred by the patient, and rarely by the medical man, to the gall bladder or bile duct. The most cursory examination into the history of a large series of cases treated by operation will show that, in almost all, the early symptoms, that which for years caused intense suffering at times, is "indigestion." The variety of names given to the symptoms of epigastric pain, nausea and vomiting is infinite: "indigestion," "gastric catarrh," spasms," "flatulent distension of the stomach," are a few of those most frequently encountered. They all, as can be seen, refer the trouble to the stomach and not to the liver.

Not only is the above eminently true, but it is also a fact that a very large proportion, possibly a majority of gallstone diseases, never utter any other symptomatology than that referred to the stomach and quite uniformly credited to indigestion. And that a large per cent. of these cases terminate in disaster, a correct diagnosis not being made, and proper treatment never instituted.

That the most serious conditions may develop in and about the gall bladder and gall ducts due to gallstone diseases that have never developed a symptomatology except that referable to the stomach has been proved by operations in the abdomen for various causes time and again by finding, unexpectedly or otherwise, the most serious conditions in these organs, the development of which has evidently required long periods of time and the remedying of which has cured the whole case, promptly and effectually.

This class of cases, we believe, has been passed over too lightly and has not been given the prominence that should belong to it, the feeling probably being that these cases were rather curiosities than a common condition, the thought not being harbored many times, by those brought in contact with them, that these cases formed a definite class of gallstone diseases because of their peculiar symptomatology and frequency. While it is true some of the special workers in this field, like Mr. Moynihan, have long appreciated the importance of this class of cases, and have with no uncertain sound called attention to it, medical men generally have not comprehended its significance. Although some have discussed these cases, so far as we know, no definite procedures have been outlined, or any rules promulgated, by which this class of cases may be differentiated from true gastric lesions, with a reasonable degree of certainty. And we believe it is wise to halt here, excepting to state in a general way the procedures that have been helpful. We all recognize

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the difficulty of bringing others to see things as we see them; hence their difficulty in applying our rules. But there are some general procedures, if carefully observed and followed, will lead to the truth. Of these we may speak. We can best illustrate that which we wish to elucidate by quoting and comparing our first two cases in which we were able to recognize the true condition. In the fall of 1905 the following case came under my observation and care:

Mr. J., 48 years of age. Family history negative. Patient had complained of "indigestion" for eight years. All his symptoms were referred to the stomach except constipation, with which he had been troubled during all of the period of indisposition. He had been treated by different medical men for various stomach lesions, and for nervous dyspepsia, the majority of the diagnoses being the latter. All treatments had been unavailing. The most prominent symptoms prevailing when I first saw the patient were the ones that had prevailed during the whole period of illness, and were as follows: Either a ravenous appetite, or a loathing of food. As to time, these two opposite conditions prevailed about equally during the clinical history. As to the time of occurrence or duration, both were very irregular. For instance, the former might be present in the morning and the latter at noon, or either might continue for several days. Sometimes the loathing was for all kinds of food, and then, again, for only certain kinds, or the patient might loathe a certain kind of food in the morning, and crave the same food at noon. Patient would at times go to the table feeling hungry and in a moment loathe everything in sight. There were but two things that could be depended upon concerning these two conditions, both were sure to appear at some indefinite time, and both were sure to disappear in the same manner. At first there were long intervals when the patient was free from both conditions, but as time passed these intervals grew shorter, and when the patient came under my observation he seldom experienced total relief from both conditions. There was never present gastric distress, that could be attributed to the taking of food, either at times when he loathed or craved it. He could eat as heartily of that which he loathed as of that he craved, so far as gastric distress following was concerned. The second symptom in the case was nausea. The patient was frequently nauseated, but never vomited. The nausea bore no relation to the time of eating, nor the amount or kind of food ingested, or whether food was taken at all. There was no regularity as to the appearance, disappearance or continuance of it. It would come on at any time and remain an indefinite period. It might last an hour or a week. The condition grew more aggravated as time went on. The third symptom in the case was pain. This pain was rather constant after eating, but at no special time after eating. It might, and often did, come in five minutes after the ingestion of food or it might not come for six hours or at any time between. The patient had tried many times to locate this pain but could not do it. At times he was sure he could put his finger over the exact spot, but when he attempted this the pain was seemingly at another place, or had ceased for the time being. The patient always located the pain somewhere in the epigastrium. The patient had lost thirty pounds of flesh in six month.

Physical examination was negative. The examination of stomach contents was as follows:

Chemical.		Microscopical.	
Total acidity	48°	Pus	Absent
Free HCl	32°	Mucus	Absent
Combined chlorides	28°	Starch	Present
Organic acids	2°	Yeast cells	Present
Lactic acid	Absent	Oppler Boaz B	Absent

Motility of stomach normal.

The evidence adduced from these examinations did not support the idea of a serious intrinsic gastric lesion, but in my judgment ruled out the possibility of such a condition. I made a probable diagnosis of gall-bladder disease due to gall-stones, and advised exploratory operation, which was accepted and performed.

The gall-bladder was sclerosed and attached by adhesions to the omentum, transverse colon, pylorus, and duodenum. The adhesions were broken up, and the remnant of gall-bladder removed. Patient made a prompt recovery, and has had no recurrence of his former troubles.

This case, though uttering no language usually understood as the expression of a gall bladder in distress or of gallstone disease of any nature, was, nevertheless, such a case. The contemplation of this case was sometimes fraught with regrets especially when we reviewed other cases, that had come for help, but had gone without relief, *because we did not know.* But as our most impressive teachers are our greatest errors (surely we ought to be excellently schooled), we received a moity of comfort. In the winter of 1906 a second case come under our care which, for purposes of comparison, we relate:

Mr. C., aged 54 years. Family history negative. The prominent symptoms in this case are the same now as when the case began, but had been aggravated, and grew more serious during the ten years of his illness. In this respect like case No. 1. The prominent symptoms were, first, vomiting. This occurred without the slightest nausea, and with no relation to the taking of food, or of the kind of food taken. This patient vomited as readily when the stomach was empty as when supplied with food. Sometimes the vomit was mucus tinged with bile, and again only empty vomiting or gagging occurred. The vomiting was irregular, coming on suddenly and unexpectedly and lasting more or less continuously from an hour to a week. This was followed by an irregular interval of from one hour to six or seven days.

The second symptom conspicuous in this case was a sensation of some foreign substance or body irritating the stomach walls. The patient could not clearly explain or describe this sensation. It did not cause pain, but when present he believed caused more distress than any pain he ever had. This sensation was very irregular in coming and going. It came most frequently in the night, though the days were not free from it. He said he dreaded these spells much more than the vomiting. The third symptom of which he complained was a weight or load in the pit of the stomach. This was not always present, but came and went at irregular intervals. Physical examination was negative, though repeated several times.

Examination of stomach contents after test meals was as follows:

Chemical.		Microscopical.	
Total acidity	62°	Pus	Absent
Free HCl	47°	Mucus	Absent
Combined chlorids	38°	Starch	Present
Organic acids	3°	Yeast cells	Present
Lactic acid	Absent	Oppler Boaz B	Absent

Motility of the stomach normal.

We advised exploratory operation which was accepted and performed. The gall-bladder contained 33 stones impacted in it. The ducts were free. The stones were removed and the gall-bladder drained. The patient made a rapid and complete recovery, and has remained well ever since.

A comparative study of these two cases reveals four significant facts: First and one of the most important, the family history in each is negative. In what respect negative? There is no discoverable trace of a neurotic tendency in either of these patients, or their families. I consider this the first and most important fact to be settled. If there is a neurotic history connected with these cases, the probabilities are there is no pathology removable by the surgeon, and the case belongs to the neurol-

ogist, or perhaps in the domain of psychotherapeutics. Let me repeat: *Too careful a study of each case in this particular can not be made if success is to crown our efforts.* The second point for comparison is, the symptoms complained of in each case are those of indigestion referred to the stomach, but their manifestations are irregular, erratic and not conformable to any definite type of stomach lesion. The third point of interest in these two cases is, while the symptoms in each are of an erratic nature, they are totally different in each case, showing that in this class of cases almost any combination of symptoms mimicking indigestion may be present. The fourth condition, and the most important of all, diagnostically, is, the motility of the stomach was normal in each case.

The above facts were carefully noted and filed for future reference.

Since the above, 29 other cases belonging to this class have come under my observation and care, in each of which have appeared a symptomatology, a cursory examination of which would lead to a diagnosis of gastric indigestion. But a careful painstaking study of the manifestations of each symptom forming the pathologic picture showed the symptom-complex to be atypical of any intrinsic gastric lesion. In no two of these cases did we find the same combination of symptoms. But in every case the symptoms first noticed continued throughout the case unchanged, except in severity. The motility of the stomach was normal in each case, and in each case a neurotic tendency was carefully looked for and excluded.

We have made in each of these cases a probable diagnosis of gallstones or gallstone disease and have advised exploratory operation. Nine only have thus far accepted the advice. In these the diagnosis has been verified and the conditions fully relieved, two of which have been related above. The other 20 are under observation, but have received no benefit from any method of treatment instituted. These cases had all been diagnosed and treated by different medical men, the diagnoses most frequently being "nervous dyspepsia." Since this paper was written two more of these cases have submitted to operation and the diagnosis fully verified.

The facts impressed by the study of these cases and the theories developed by reason of them are about as follows: Gallstones or gallstone diseases develop and progress for a long period of time and consummate the most serious lesions of the gall bladder and ducts and terminate in disaster to the general system, without any evidence of their existence being manifest, except in a group of symptoms referable to the stomach and usually attributable to "indigestion." The study of these cases has impressed us with what we believe to be a fact, that if a careful scrutiny is made of each symptom that appears in any group which forms the pathologic picture in any case belonging to this class of cases we will find the majority of these symptoms tend to a reflex origin rather than to faulty digestion, and that in every case where these so-called symptoms of gastric indigestion prevail and the motility of the stomach is

normal the lesion is extrinsic to the stomach, and in the large majority of cases wherein a neurotic tendency can be excluded the pathology is in the gall bladder or ducts, the removal of which, surgically, will remedy the whole case.

From our study of these cases we believe that if a very large proportion of gallstone cases are to be recognized, we must learn to recognize them from a peculiar symptomatology which is referable to the stomach, and not from the so-called classical symptoms, characterized by severe spasmodic or colicky pains, chills, perspiration, prostration, soreness and enlargement of the liver, which are the symptoms of moving stones and occur usually as late symptoms of the disease, and possibly only in a minority of cases.

We have found the following a safe rule by which to be guided: In diseased conditions the symptomatology of which is referred to the stomach, in which the motility of the stomach is normal, and a neurotic tendency can be excluded, we may reject a diagnosis of an intrinsic gastric lesion, and conclude that a pathologic condition exists in some organ more or less remote from the stomach, of which the apparent gastric lesion is only a reflection. If pain is one of the prominent symptoms, especially if it has no relation to the time of the ingestion of food, we should be very suspicious of a gall-bladder or gall-duct lesion due to gallstones. While the motility of the stomach is a valuable factor in the diagnosis of this form of gallstone diseases, it is by no means the only factor. Its only service is its determining influence as to whether or not the lesion, or condition, is intrinsic or extrinsic to the stomach.

We must bear in mind that in all of these cases there are three propositions that must be passed upon. First, is the lesion an intrinsic gastric lesion? The normal or abnormal gastric motility will, in my judgment, in a very large percentage of cases, settle this question. If decided not intrinsic, is the case a veritable pathologic lesion in some organ more or less remote from the stomach, of which the apparent stomach lesion is only a reflection? Or is the case a neurologic or psychologic condition? To substantiate either of these propositions is a task in every case, and in some cases impossible, without the aid of exploratory measures. To pass intelligently upon these cases, one must have before his mental vision the various pathologic pictures of intrinsic gastric lesions. We must know and properly weigh all of those conditions that may be present which characterize either an intrinsic or extrinsic gastric lesion. For instance, there may be present a hyperacidity of the stomach contents; this may stand for gastric ulcer or cholelithiasis, or it may be a case in which the hyperacidity is only apparent. The personal equation of the patient must be determined and taken into account. All the impressionable faculties of the medical man must be brought in contact with these cases, and all impressions received referred to that ego within us made alert because of experience and study for final judgment of the case.

PAPILLARY OVARIAN CYSTS.

SYMPTOMS: PROLIFERATING PAPILLARY CYSTOMA OF THE OVARY; OVARIAN CYSTOMA; PAPILLOMATOUS OVARIAN CYST; MULTILOCULAR CILIATED CYSTOMA.*

GEORGE W. GREEN, M.D.
Surgeon to the Ravenswood Hospital.
CHICAGO.

DEFINITION.

A cystic tumor growing from the hilum of the ovary and consisting of a connective tissue wall with dendritic, papillomatous growths covered with a cylindrical epithelium and containing a viscid fluid; the papillomatous growths may penetrate the cyst wall and infest the neighboring peritoneal surfaces, such as the broad ligaments, uterus and intestines. It is supposed to arise from the Wolffian body. They range in size from a pea to a man's head, and may be nearly all cystic or nearly solid. Estor[1] believes the solid papillary ovarian tumors begin as cysts in which the excrescences proliferate on the interior of the cyst until it is a solid mass of cauliflower growth.

ETIOLOGY.

Williams[2] says "the growths are derived either from the Graafian follicles or germinal epithelium; their origin from relics of the Wolffian body or from the tubal epithelium, while possible, has yet to be demonstrated." Nagel[3] points out that the germinal epithelium is frequently preserved under peritoneal adhesions about the ovary, and that the irritation of inflammatory changes might lead to a proliferation of germinal epithelium with the formation of pseudo-Pfluger's ducts and the development from them of all forms of ovarian tumors.

PATHOLOGY.

In nearly all cases where there are excrescences on other organs there is ascites; this ascites may be the only symptom complained of by the patient. Emrys[4] (Robert E.) believes this fluid to be a secretion of the epithelium covering the papillary projections, and he gives the following conclusions in regard to the origin and growth of these tumors:

1. Primary superficial papilloma of the ovary is derived from the germinal epithelium and underlying connective tissue stroma.

2. The acini of the periphery of the ovary are derived from ingrowths of the germinal epithelium.

3. The vesicles which form so large a proportion of the papillary projections result from papillæ whose connective tissue cores have undergone edematous degeneration.

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* Read before the North Shore Branch of the Chicago Medical Society.

1. Estor: Gaz. des hop., 1906, April.
2. Williams (J. W.): Johns Hopkins Hosp. Bull., Baltimore, 1891, vol. ii, p. 149.
3. Nagel: Archiv. f. Gyn., 1887, vol. xxxi, p. 327.
4. Emrys (Robert E.): Jour. of Obstetr. and Gyn. of the British Empire, 1908, February, pp. 96 and 99.

4. The secondary deposits arise from disrupted papillæ; the dissemination of secondary deposits is favored by ascites.

5. The collection of fluid in the abdomen represents the secretion of the epithelium forming the outer covering of the growth.

CLASSIFICATION.

Pfannenstiel (J.)[5] makes the following grouping as the result of his researches: The ovarian papillomata are of three kinds:

1. Papillary adenoma.
   (a) Pseudomucinous.
   (b) Simple or ciliated.
2. Papillary adenocarcinoma.
3. Mixed tumors.
   (a) Papillary adenosarcoma.
   (b) Papillary carcinosarcoma.

Papillary adenoma form about 16 per cent. of ovarian papillomata. They are a variety of the glandular tumor. They do not invade neighboring parts, nor do they cause metastases. Can not be said to be malignant. Ciliated papillary adenoma form about 35 per cent. of ovarian papillomata. They contain thin, cloudy, serous fluid, never colloid stuff. Metastases do not occur. Ascites is present in about 60 per cent. Papillary adenocarcinoma form nearly 50 per cent. of ovarian papillomata. They rarely exceed a man's head in size. Often present macroscopical signs of cancer. Grow more quickly than adenomata. Cause cachexia and great ascites. Papillary adenosarcomatous cyst: The clinical features of this tumor are those of malignancy. Rapid recurrence after apparently complete removal.

Semb[6] believes these papillary ovarian cysts may be divided into malignant and non-malignant, and that the malignant are so from the beginning, and that the non-malignant never become malignant. Pozzi[7] regards them as forming "but one clinical and anatomopathological group," having two important features: First, ascites in connection with external vegetations; second, disseminated growths over the visceral and parietal peritoneum, and not always malignant. Some never undergo malignant degeneration. Griffith and Williamson[8] class them as on the borderline between non-malignant and malignant growths. Cohn (E.)[9] gives a very interesting description of the change from the benign to malignant growths. Levi[10] thinks any of them may become malignant. The uterus may become involved through the rupture of lymphatic glands, frequently in the uterus.

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5. Pfannenstiel (J.): Centralbl. f. Gyn., 1893, vol. xvii, p. 577; Archiv. f. Gyn., 1894-5, vol. xlviii, p. 507.
6. Semb: Om de Papillaere Ovarial-Kystomer. Oscar Semb, Kristiana, 1896, p. 107.
7. Pozzi: Am. Jour. Obst., N. Y., 1904, vol. lv, p. 433; Tr. Am. Surg. Assn., Philadelphia, 1904, vol. xxii, p. 87.
8. Griffith and Williamson: System Gyn. Allbutt, Playfair, Eden., 1906, p. 425-428.
9. Cohn: Ztschr. f. Geburtsch. u. Gyn., 1886, vol. xii, p. 22.
10. Levi: Annali di Obstetricia Ginecologia, 1904, vol. xxvi, p. 340; Arch. di ostet e ginec., Napoli, 1904, vol. xi, p. 289.

FREQUENCY.

Netzel[11] states that in 264 operations on ovarian tumor 20 per cent. were found to be papillary ovarian cysts. In many of these cases an operation was not deemed advisable. The author reports one case to show the existence of a solid papillomatous tumor on one side and a cystic papillomatous tumor on the other side.

The first case recorded in literature was in 1812 by Prochaska.[12] By a careful review of the medical literature I can find only 365 cases recorded. In six of these cases, judging from the history, the diagnosis was doubtful, and they were likely not papillomatous ovarian cysts. I have not considered these, making a total of 359 cases reported. The age was given in 276 of these cases; the youngest was 16, and 6 were under 20; 43 were between 20 and 30; 78, or 28 per cent., were between 30 and 40; 135, or 49 per cent., were between 40 and 60, and only 14 of them were over 60 years of age. In 188 cases the domestic state was not given, and in 171 in which it was stated seven were single and 164, or 96 per cent., were married. Forty-six of these were sterile, while 28 were unipara and 85, or 51 per cent., were multipara.

SYMPTOMS.

The symptom of ascites was noted in 217 cases, being present in 173 and absent in 44 patients. In 183 both ovaries were involved, while the history was doubtful on this point in 28 cases. In 149 cases there were adhesions to neighboring organs. Those having excrescences on neighboring organs were 137. In 98 there were no excrescences other than the affected parts. In 124 this history was not stated. The uterus was involved 68 times, and 169 times there was no involvement, while in 122 cases their history on this point was absent or doubtful.

Of the 359 cases, seven died before operation, and in 113 cases the result of the operation was not stated. Out of 239 cases where the results were stated, there were 38, or 15 per cent., deaths—a very good result considering the class of patients and facilities for doing work at the time it was done. In 198 cases no statement was made about metastases, or recurrences, or secondary operations. In 161 in which these points were noted, there were 34 secondary operations; 61, or 31 per cent., had metastases; 38 of these 161, or 23 per cent., were stated to be malignant.

The following cases occurred in the service of Dr. Bussey and myself at the Ravenswood Hospital:

CASE 1.—Patient aged 48 years, multipara, menstrual periods regular, 28 days type of about four days' duration, no hemorrhage. Appetite and digestion good. During last year has noticed a gradual increase in size, and during the last two months has been uncomfortable on account of size of abdomen. Physical examination revealed abdomen filled and very tense with fluid, and a mass the size of a small child's head on right side of pelvis. Operation Sept. 14, 1907. Marked ascites, large cauliflower mass in place of right ovary. Uterus, tubes, broad

11. Netzel: Hygiea, 1887, vol. xlix, p. 151.
12. Prochaska: Disquito anatomic-physiologica organismi, Vienna, 1812, p. 170, Tab. v.

ligaments, and intestines covered with warty exrescences. Left ovary also papillomatous, size of small fist. Metastases in great and small omentum. Both ovarian cysts and tubes removed. None of the excrescences were removed. Diagnosis: Papillomatous ovarian cyst which had become carcinomatous. Uneventful recovery from operation, but a gradual reaccumulation of fluid until in two months it was necessary to remove same by buttonhole incision. Patient died of recurrent carcinoma, April 8, 1908.

CASE 2.—Patient aged 43, multipara, menstrual periods have been regular until last year, since when they have been irregular, with more profuse flow and pain. During last year, patient complained of backache, pain in lower part of abdomen, made worse by standing or walking, and considerable gaseous distention made worse by large quantities of food; frequent and painful urination, together with constipation. At operation, a large papillomatous cyst of the right ovary was found, with excrescences on broad ligaments, uterus and bladder, also intestines. Left ovary was cystic, filled with pus and carcinomatous. Metastases was found in omentum. There was some ascites. All pathological tissue was removed as far as possible, and the patient made a recovery, but sooner or later will have a recurrence.

From a review of the literature on this subject, one is justified in the following conclusions:

1. That papillary ovarian cysts are more common than was formerly held.

2. Apparently much more common in the married, 96 per cent. married, and in those who have borne children, 51 per cent.

3. Ascites is a frequent symptom, being present in 79 per cent.

4. The disease usually starts in one ovary and then spreads by rupture of the cysts and the grafting process to the surrounding organs covered with peritoneum until both ovaries were involved in 55 per cent. of the cases, and excrescences appeared on other organs in 58 per cent. of the cases.

5. The tumors have a greater tendency to become malignant than was formerly supposed. As many as 23 per cent. were malignant where this point was definitely stated, and metastases occurred in 37 per cent. Probably the malignancy is even greater than this, as many of the cases were not followed to their end.

TREATMENT.

With practically no mortality and a very slight recurrence, if removed early, and the probability of 37 per cent. or more becoming malignant, it evidently is our duty to diagnose and remove these tumors early. With 59 per cent. involving both ovaries, and the showing in these histories that when the recurrence takes place it is usually in the opposite ovary, broad ligaments, or on the uterus, it should be the practice of every surgeon to remove both ovaries and uterus if to the slightest degree involved. This seems to be in harmony with the experience of some of the leading surgeons of the day. On this subject Dr. A. J. Ochsner[13] says: "My method consists in removing the cyst, both ovaries, Fallopian tubes and the uterus, and as much of the broad ligaments as

13. Ochsner: Personal Communication.

I can without endangering the ureters. The recurrence in my experience has always been in the broad ligaments."

Dr. W. J. Mayo[14] says: "As to papillomatous ovarian cysts, we have had a very high percentage of cures since we have practiced the removal of both ovaries and tubes and supravaginal hysterectomy. It has formerly been our experience that when we removed a tumor of one side a second tumor often followed on the other side, and later a few cases eventually returned with cancer of the body of the uterus, so that the complete radical operation can be expected to cure a very large percentage of cases."

If there are recurrences, reoperate and remove all papillomatous tissue it is possible to remove, unless the case is hopelessly malignant.

2765 N. Lincoln Street.

HYPERPLASTIC ULCERATIVE COLITIS.*

CARL BECK, M.D.
Surgeon to the North Chicago Hospital.
CHICAGO.

The pathologic conditions of the large intestine, cecum, colon and sigmoid have received less attention by the surgeons than stomach, duodenum and rectum. We are better informed about the changes in these organs than at any previous time, thanks to the frequent autopsies *in vivo* of the modern surgeons. Quite different are the conditions of the cecum, colon and sigmoid. The terms of colitis and dysentery comprise a number of widely different pathologic changes, with more or less similar symptoms. I publish the findings of a few cases of this rare condition, particularly of one, which I had the opportunity to observe very accurately.

The term "colitis ulcerativa" was coined, according to German writers, by Boas, in 1903. From the clinical as well as from the pathological standpoint, I should, therefore, say that the pathologic condition which I describe, and of which I demonstrate specimens and patient, is a pathologic entity which at present can not be called by a better term than hemorrhagic grave colitis.

After careful study of the cases on record, I should say that there is one characteristic feature about all of them, namely, that they have nothing to do with dysentery. This latter disease is better known, has been studied well, and its pathology, particularly its etiology, is better defined.

Ulcerative colitis seems to be bound to no particular age. Rosenheim mentions a child of 6 years. I have in mind a number of cases of former years which I would place in this category, but I have only four cases which I have positively diagnosed as such and treated accordingly, and which I use as the basis of this paper. Two of them are those of young men of 20 and 27, one of 48, and one of over 50 years of age.

14. Mayo: Personal communication.

* Read before the Chicago Medical Society, Dec. 2, 1908. For discussion, see page 224.

REPORT OF CASES.

CASE 1.—Mr. Z., about 50 years of age, came to me complaining of severe intestinal disorder. For several months he has had pain in the lower abdomen, especially left side, with alternately constipation and diarrhea, with blood and mucus in stool. During last few days he is constipated almost to obstruction. He thinks he is suffering from aggravated case of piles. Examination reveals enormously distended abdomen, dulness and tenderness on left side. Examination of rectum shows bowel velvety and congested, easily bleeding, and filled with masses of feces and hemorrhagic purulent discharge. Patient is treated locally with irrigations for some time, but bleeding grows alarmingly worse, so that an explorative laparatomy is performed. We find the large bowel thickened up to the splenic flexure; the sigmoid, particularly its ligament, infiltrated. An opening in the colon is made and the bleeding mucosa everted, and a left inguinal colostomy performed. Irrigation with astringent solutions continued for weeks, patient gradually recovering. A year later the fistula is closed by operation. This case was not fully appreciated by me at that time (three years ago) as colitis ulcerativa gravis, as I did not know much about the pathology of these conditions and the literature available on that subject was limited.

CASE 2.—L. S., a young man of twenty, came to me complaining of pains in the abdomen, especially on the left side, and a constant desire to have a passage. His stools, six to ten a day, were bloody. He was anemic and had the appearance of a very sick man. I directed him to go to the hospital immediately, and put him to bed. An icebag was applied to the abdomen. Examination revealed anemia of high degree, 55 per cent. hemoglobin, a pulse easily compressible, heart with anemic murmurs. Local examination of the rectum showed no piles, but a velvety, easily bleeding mucosa of the rectum, with polypous excrescences which would bleed on the slightest touch. Great tenderness over sigmoid and whole colon; distinct thickening even externally palpable. Examination of the stool showed it contained a very large amount of blood, no tubercle bacilli or ameba, but lots of pus cocci. The color of the passages was that of dark prune juice, with clots, patient having six to ten and more passages a day. Local and general treatment was begun. All the remedies known as hemostatic, internally and externally, were given; irrigations with astringents were tried; tubes of different forms introduced to produce pressure—all without avail. Patient grew steadily worse. Temperature daily as high as 100° to 101° set in, and a characteristic marantic edema of lids and around the joints appeared. Starving and pure albumin feeding were useless. Finally, I decided to make a right colostomy, reasoning that the discharge of the feces from the cecum would probably remove the irritation. Patient not being able to take general anesthetic, I decided to perform operation under cocain. Patient bore the operation very well, while working on abdominal wall, but suffered a great deal when an attempt was made to pull on the cecum or colon. Both seemed so thickened and shrunk that they could not be brought forward, and it was decided that an ileostomy be made. Patient rallied after this and immediately began to improve. His discharges diminished to one or two daily, became more purulent, of a bright reddish-yellow color, and on one occasion the discharge was pure pus. No fecal matter passed through the rectum. He gained in strength, was able to sit up, leave his room and be outdoors for hours. I had every hope of succeeding in my efforts to stop the pathological process, when patient again began to lose ground, blood in the discharges reappearing, and, although the ileum discharged normal secretions, the large bowel kept on bleeding. His pulse grew worse and the ominous marantic edema and rheumatoid pains set in again. He was obliged to take to his bed, and there I had to use heroic means, deciding to excise the whole large bowel. Gas anesthesia was decided upon and a median incision was made and the sigmoid, colon descendans, transversum and ascendans were found shrunk to a very short tract thickened and brittle. Starting above the rectum, cutting it across, the distal end was closed by purse-string suture. It was difficult to suture, as the threads seemed to cut through. With difficulty the ligating and cutting were continued to

the hepatic flexure near the ileostomy, and there the proximal end of the bowel was sewed into the abdomen to prevent stagnation in a blind pouch. Patient rallied and apparently was doing well for five days; then he collapsed, and died. An abdominal autopsy revealed a mushy condition of the stump, but no peritonitis, and no other cause for his death could be found but anemia and its result. The specimen shows macroscopically all signs of hyperplasia, edema of the strata, multiple ulcerations of different sizes, one particularly large and deep ulcer in the sigmoid. Microscopic examination shows a diffuse inflammation of the mucosa and submucosa, edema and infiltration, and hyperplasia of the muscular strata.

Hemorrhagic ulcerative colitis is a disease which is from the start chronic. Most of the patients do not pay much attention to their trouble until it reaches a dangerous state, their initial symptoms usually being treated for "nervous disorder of the bowels," or hemorrhoids, or similar light disorders. Two symptoms bring them under the care of the physician—pain and hemorrhagic diarrhea. The former is a sort of dull pain in the lower abdomen, particularly over the sigmoid region, preceding defecation. At times the pain may be very severe and more than once an error has been made and the case taken for appendicitis (Zacharie). The stool is hemorrhagic, liquid, often brownish, but mostly like prune juice. If the hemorrhage is profuse, clots of blood are discharged, three and four stools daily, but often ten and twenty liquid blood defecations have been observed. The odor is very offensive, showing a great deal of decomposition is going on. When the stool stands awhile a characteristic change is visible. It forms a bloody gelatinous scum on top, which on microscopical examination is found to be almost entirely cell detritus and pus. Many times pus is clearly visible.

The microscopic examination of the stools shows the same findings with great regularity, viz.: pus cells and epithelial detritus, with a large number of different micro-organisms. Most of the ordinary pathogenic and non-pathogenic germs found usually in the bowel are represented, cocci and colon bacilli being prevalent. The culture also shows a prevalence of the latter two species. Our observations as well as those of others show that tubercle bacilli and ameba, Shiga and Flexner bacilli, are absent. This alone would differentiate the process from dysentery were it not for many other clinical as well as pathologic peculiarities. An injection into the rectum of a guinea-pig of the fresh discharge of a patient has produced no symptoms whatsoever.

The course of the disease is very different, according to the gravity of the case. The true cases of this category run a chronic course of weeks or months, some of them years, the gravest ones ending fatally, no matter what therapeutic measures are tried. The patients become weaker in consequence of the serious losses of blood; the anemia, with all the characteristics of a secondary anemia, reaches a high degree, so that their mucous membranes and conjunctivæ appear entirely washed out, a certain marantic edema takes place, with swellings of the joints and pains like rheumatism. They run an irregular fever, not too high, but steady during intervals up to about 101 or 102 degrees; their pulse becomes flabby and suppressible. If the condition subsides, as in two

of my cases, one of which is entirely healed, we observe normal conditions of blood and temperature. In the severe type nothing will produce an improvement.

This leads us to the possible complications: ulcerations of the bowel must eventually lead to infiltration of the mesentery, infection of glands, and general septic conditions, although, in most of the cases, the latter have been very chronic. Marantic thrombosis has repeatedly been observed, as well as abscesses in the groin and metastatic, retroperitoneal and in the liver. Ulcers have healed and led to strictures, with obstruction. Swelling of joints and other complications usually found in chronic sepsis are often recorded. Perforation of the bowel and peritonitis are also mentioned.

PATHOLOGIC FINDINGS.

The objective symptoms, as far as the bowel is concerned, are scant, because palpation will reveal little and inspection with the rectoscope is not very satisfactory, as it permits a view of only a short portion, which in most cases is the portion least affected. I have examined all four cases with the sidmoidoscope, as have other observers, and we could see only a bleeding, congested mucosa, which would give no indication of the process higher up.

The macroscopic examination of the specimen removed shows the same changes all over. Even the muscularis is thickened, infiltrated and edematous, as is the submucosa. The mucosa is hyperplastic, forming regular polypi, and between them are ulcers which go down to the muscularis. Microscopically the picture tallies with these findings. There are the polypous excrescences of the glandular part adjoining deep ulcerations, infiltration and edema everywhere, and groups and clusters of micro-organisms. Other observers who had opportunity to make post-mortem examination have found that some cases hardly showed an ulceration. In such cases a general oozing from a congested mucous membrane must have caused the bleeding.

ETIOLOGY.

About the etiology little is known. Altogether the cases which I here cite gave me the impression that the base of the trouble is a very chronic septic process of some kind, of specific organism, which unfortunately we can not demonstrate.

THERAPY.

The therapy of grave inflammation of the bowel depends upon the gravity of the case and the stage in which the pathologic condition comes under our case. The possibility of the development of such a serious condition from a simple colitis, especially the recurrent slight hemorrhage, ought to keep our attention. In the earlier stages the medicinal and dietetic treatment will no doubt be efficient. Wegele (*Therapie der Magen und Darmkrankheiten*) outlines the treatment very clearly.

Absolute rest is indispensable. The diet must be regulated from the standpoint that anything which forms clumps in the bowel or leaves

large residues is to be avoided. Medicines internally are useless unless the cause is achylia gastrica, in which case HCl is of great value.

Thus we arrive at what all call the *ultimum refugium*, the surgical treatment, and here we find that most observers have agreed on the ileostomy or colostomy, with individual modifications, for the reason that the removal of the infected feces from the bowel, its renewed infection, and the possibility of irrigation by means of such an opening in the intestine, which would give the bowel rest and cleanliness, seemed, on the whole, to give satisfactory results.

Nehrkorn, from the Clinic Czerny, Heidelberg, has written a résumé of 34 cases treated in this manner. The first case was operated upon by Folet in 1885, a cecostomy being performed. The patient died five days after operation. The first successful case was operated upon by Prof. Franszesco Durante in Rome, with Dr. Navaro, in 1887, and was cured in four months. The credit of priority is due them. Mayo Robson operated his first case in 1893. Hale White and Golding Bird, of London, reported three cases in 1899, two being membranous colitis and one chronic dysentery, or a grave colitis in our sense of the term. They recommended the operation as curative, and urged leaving the bowel open as long as possible, but preferred colostomy to cecostomy, because of easier closure subsequently, and because of better control of the evacuation. Norman Dalton is of the same opinion.

Czerny operated three cases, reported by Nehrkorn. He recommends the left inguinal colostomy and dispenses with irrigations. Out of the 34 cases, 5 died. A colostomy on the right side was performed in 16 cases, with the result of 6 successes and 3 failures, and on the left side in 9 cases, with a result of 7 successes and 1 failure. Keatly and Weir recommended the implantation of the appendix into the abdominal wall, using same for irrigation (appendicostomy). Summers opposed the idea, the lumen being too narrow for the introduction of a catheter.

I have performed the ileostomy once, using the opening only for evacuation, as an attempt to irrigate was followed by great pain each time and was useless. In another case I performed a left inguinal colostomy, which proved to be perfectly successful, terminating in a complete cure.

Another method highly recommended by some authors (Moszkowicz) is the exclusion of the bowel by implantation of the ileum into the sigmoid flexure. This method has proven to be successful in some cases. But I will show in a skiagram that contents may passs through an excluded bowel.

Cases in which the symptoms persist, notwithstanding that the bowel has been drained a due length of time, are lost unless something further is done for them. In one such case I decided to take most heroic measures, viz., the removal of the colon and sigmoid. This method was first advocated by Arbuthnot Lane—not for this disease, but for plain constipation. This author has made use of the ideas of Metchnikoff in regard to the value of the bowel, and has, in a few cases, removed part, and in one the entire tract. The report does not give the final results,

but, since it is technically and physiologically possible to live without a large bowel, I decided in this otherwise hopeless case to make this attempt. The case proved fatal, but in studying it I must say that had I performed the operation sooner or at first I might have succeeded. Should another like case come under my observation, I certainly will not wait to perform this operation *in extremis*, but will do so earlier with a view of good results.

In conclusion, I will say:

1. The hemorrhagic grave type of colitis is a clinical entity.

2. It is pathologically characterized by hyperplastic polypous condition of mucosa, ulceration, edema and fatty degeneration of all the strata of the bowel.

3. It usually extends throughout the large intestine.

4. In many cases, even of the most chronic type, it is possible to arrest the disease by dietetic and local treatment.

5. Some cases, however, persist in growing steadily worse, notwithstanding treatment, and, therefore, need surgical interference.

6. In the majority of such cases a colostomy, preferably on the left side, will cause the case to terminate in a cure.

7. In extreme cases a removal of the whole tract of the large bowel may be made, it being technically feasible.

TREATMENT OF PNEUMONIA.*

G. L. Eyster, M.D.
ROCK ISLAND, ILL.

I wish to preface my remarks upon the treatment of pneumonia by the following quotation from Osler: "Pneumonia is a self-limited disease and runs its course uninfluenced in any way by medicine. It can neither be aborted nor cut short by any known means at our command. Even under the most unfavorable circumstances it will terminate abruptly and naturally without a dose of medicine having been administered. So also, under the favoring circumstances of good nursing and careful diet, the experience of many physicians in different lands has shown that pneumonia runs its course in a definite time, aborting sometimes spontaneously on the third or fifth day, or continuing until the tenth or twelfth. We have, then, no specific treatment for pneumonia. The practitioner may bear in mind that the patient is more often damaged than helped by the promiscuous drugging which is only too prevalent."

These are words of wisdom spoken by one of the master minds in medicine, and they are fully concurred in by the vast bulk of the medical profession in this and other lands. We are all only too prone to confound the effects of drugs with the compensatory powers of the body for neutralizing pathologic processes, and so think that because crisis occurs soon, following the administration of this or that drug, therefore, we

* Paper read before the Rock Island County Medical Society, Dec. 8, 1908.

have a specific. But one swallow does not make a summer and so we find that the crises following these so-called specifics are very far from a Eureka. By this I do not mean to say that the pneumonia patient needs no medicine. It is just as absurd to declare that nothing can be done for him medicinallly as to throw down the reins of a runaway horse because he can not be stopped immediately. Many times life is saved by proper management. By management I mean to include nursing, diet, hygienic surroundings, physical therapeutic measures and medication.

The institution of intelligent hygiene, of careful nursing, of proper diet and the mitigation of the most distressing symptoms is in order. Nothing could be considered too slight or insignificant in treating cases of pneumonia. The mouth should receive early attention, for a foul tongue promotes indigestion. An antiseptic mouth wash in hot water three or four times daily is always of benefit. The surroundings should be cheerful, with perfect ventilation, as plenty of fresh air will do much to prevent circulatory failure. The tissues can only use a certain amount of oxygen, but that should be furnished from an atmosphere that is pure and unvitiated. Absolute rest in bed from the very beginning is imperative. The patient should not be allowed to raise himself in bed for food or medicine, and the bed pan should be used from the start. The constant annoyance from too frequent sponging, moving, giving food and fussing about the patient is contraindicated. Therefore, a part of any treatment should be to insist on proper intervals of absolute rest of two or three hours, and the giving of food and medicine should be so outlined for the nurse that during the twenty-four hours there should be several periods of absolute rest. Occasional sponging of the skin with warm or tepid water is agreeable to the patient, quiets nervous symptoms and aids elimination. Water for drinking purposes should be supplied freely, and in order to assume vicariously as fully as possible the functions of the incapacitated lung and to prevent the accumulation of toxins the organs of elimination must be kept active. Diuresis is maintained usually by partaking freely of plain or medicated water, but in case the kidneys are not secreting sufficiently the subcutaneous injection or an enema of normal salt solution usually will meet all the requirements, and because of its beneficial effects on the heart is always a valuable measure.

At the outset of the disease the thorough evacuation of the bowels by the administration of broken doses of calomel, followed by one of the salines, is a most important measure, and, while from time to time it may be necessary to repeat this measure to prevent toxemia from intestinal absorption, routine purgation is to be condemned, as it may exhaust the patient.

Digestion is always slow and imperfect in pneumonia, and if food be taken in too large an amount or in any but the most digestible forms it is apt to undergo an abnormal fermentation in the gastrointestinal tract and produce toxins. This adds to the load on the organs of elimination already overburdened in trying to eliminate the toxins peculiar

to pneumonia. The diet, therefore, should be plain, nourishing and easily digestible. Milk, plain or peptonized, should be the chief article of nourishment, as it gives a maximum of nutrition with a minimum of bulk.

In the treatment of pneumonia all manner of topical applications to the chest have been used. Blisters, cupping, leeches, hot and cold poultices, ice packs, cotton and flannel jackets, covered with oiled silk. I am convinced that none of these have the slightest influence on the course of uncomplicated pneumonia, but in cases in which pleurisy is a complication they may be of great value in relieving the pain which accompanies the inflamed pleura. As a rule heat is more agreeable than cold, but there are many exceptions, and the choice between the two may be decided by the patient's comfort. In uncomplicated pneumonia, however, for its psychical effect upon the patient and friends, I believe that a cotton jacket should be applied to the whole trunk, maintaining it in place and covering it with oiled silk, leaving it on during the entire course of the disease, save when an occasional examination of the chest is necessary.

Thompson's experiments to determine the depth to which external application of both hot and cold could be made to modify deep-seated body temperature confirm the opinion that there is little value in such topical applications in uncomplicated pneumonia. W. Gilman Thompson (*The Journal A. M. A.*, March 19, 1904) experimented on several patients who had sinuses resulting from chronic empyema; through these he inserted long-stemmed thermometers for a depth of six or eight inches into the thoracic cavity, then applied poultices as hot as could be borne (in some instances 130 F.), alternating with ice, but in no instance was the temperature of the deeply-seated thermometer affected more than one-eighth of a degree F. The conclusion is justified that, so long as the superficial circulation is maintained, the constantly moving blood conveys away, whether of heat or cold, any external application, thereby preventing a deeply-seated organ, like the lung, which has an independent blood supply, from being influenced. Fever, unless it causes restlessness and remains permanently high, is best left untreated. If it should be persistently high, hydrotherapy is indicated. Ice bags to the head and cold sponging are probably the safest measures. The cold tub bath, because of the handling required, is depressing and often unfavorably influences the pulse and respiration. Chemical antipyretics are to be disparaged, though, of course, they may be used as a specific in complicating conditions, as, for example, quinin in malaria. Occasionally a few doses of some antipyretic will give relief, allaying pain and headache, reducing fever and producing sleep. Continuously administered they are decidedly injurious, and after the second day I do not think it safe to give them at all.

Arterial Sedatives.—Arterial sedatives are much less used than formerly. If used at all, they should be used sparingly and with caution, and only in the initial stages of the most chronic cases. Aconite and

veratrum viride may produce a fatal termination by their toxic effect on the heart muscle.

Stimulants.—The use of stimulants in pneumonia requires very careful attention. There are many patients who require no stimulation at all. The practice of giving every patient, suffering from pneumonia, whisky, digitalis or strychnin is a therapeutic outrage. There are times when these patients need stimulants, but the drug to be used and the time to use it should be selected with care.

Anders says: "If the pulse goes over 120, if the first sound becomes weak, if the pulmonary second sound loses its accentuation, or if weakened nervous symptoms appear, then a stimulant is indicated." Alcohol, strychnin, digitalis, nitroglycerin, camphor, suprarenalin, ammonia and normal salt solution are the drugs most commonly depended upon for this purpose. Alcohol as a stimulant has withstood the test of many years, and is regarded by most clinicians as the best remedy with which to combat the cardiac weakness of this disease. It should be used only when the pulse and general condition indicate it. While it is often of the greatest importance, many patients do better without it, but with a feeble dicrotic pulse, a dry tongue and a profoundly asthenic condition it is always best to give it. If the patient sleeps after a little whisky, brandy or champagne, or if the pulse becomes less frequent or larger, it has done good. In my own experience I have found that whisky and champagne or brandy and champagne were in many cases much more beneficial than either alone.

Perhaps the most universally used drug as a stimulant in pneumonia is strychnin. Here we have another illustration of a physician using a drug without a clear and perfect understanding of what he is trying to accomplish. Dr. Hare says: "Strychnin is a drug that goads the system to increased endeavor and does not simultaneously aid it. It is the crack of the whip which keeps the team from being mired. Would any sensible driver whip his horses all day, and then whip them all the more when they are stabled?" Strychnin is a drug to be used at the crucial moment, when it is necessary for the system to make one grand effort to pull itself out of a desperate situation. In this disease it is not a drug to be used continuously, although its use may extend over several days. The constant use of this drug puts the system on a "wire edge" and will result in more harm than good. Strychnin should be reserved for the crowded hour, when a sharp, quick attack on the impending depression, by the administration of 1/20 or 1/15 or even 1/10 will call for the patient's best effort to recover.

Caffein and camphor are good and reliable heart stimulants. Strong black coffee is a very efficient means of administering caffein. Camphor is best given hypodermically, dissolved in ether or sterile olive oil in doses of from 1 to 2 grains every two or three hours. Suprarenal extract has been used to some extent as a stimulant with much reported success. I have had no experience with it myself, but I feel quite certain it is not the equal of alcohol, strychnin and normal salt solution.

The beginning of cyanosis calls for practically the same stimulation as that of the heart. The value of oxygen inhalations in this condition is disputed. It is credited by some with striking, though fugitive benefit. By others it is thought that with other respiratory and cardiac stimulants it may carry the patient through the dangerous stage of the disease, and by still others it is condemned altogether. It is true it will not check the disease, and in cases of marked cyanosis it is rarely, if ever, that life is saved by its use, yet in my mind there is no doubt that oxygen is palliative, that it makes the breathing easier, lessens cyanosis, induces sleep, and in this way aids in conserving energy. The trouble is that its use is generally put off too long. It should be commenced at the first signs of cyanosis and given in quantities sufficient to relieve. In severe cases it may be necessary to give it more or less continuously for 8 to 10 hours, in other cases its use for half an hour at a time every two or three hours may be sufficient.

Various drugs have been advocated as specifics in pneumonia—digitalis, serum therapy, salicylates, creosote, quinin, calomel, potassium iodid and a host of others. I feel that it would be a waste of time to take them up individually, believing that none of them have been proved of that specific value so enthusiastically claimed for them by their sponsors.

The therapeutic deduction I wish to draw is that the best treatment of pneumonia, as we know it to-day, is the well-considered hygienic and dietetic management of the case and the careful and intelligent medication of the individual patient as the special symptomatology may indicate.

PERFORATING WOUNDS OF THE UTERUS, INFLICTED DURING THE COURSE OF INTRAUTERINE INSTRUMENTATION.

AIMÉ PAUL HEINECK, M.D.

Professor of Surgery, Reliance Medical College; Adjunct Professor of Surgery, University of Illinois; Surgeon to the Cook County Hospital.

CHICAGO.

A. General Considerations.—As to nature: as to causes: predisposing; exciting.

B. An analysis of all the cases published in the American, English, French and German literature from 1895-1907, inclusive.*

C. Conclusions.

GENERAL CONSIDERATIONS.

Perforations of the uterus can and do occur with the most startling ease. It is difficult to determine the frequency of this accident. Operators, as a rule, are unwilling to give publicity to such an occurrence happening in the course of their intrauterine instrumentations. There is probably no gynecologist in the world of large experience who has not

* All the literature to which I had access.

met with this accident, perhaps several times, in his work (Baldwin[1]). In the reports of 3,172 consecutive autopsies held between February, 1898, to February, 1908, at the Cook County Hospital, not one case of perforated uterus is recorded. In all cases of abortion and in all the cases of pregnancy treated at the same institution during the years 1903-1907, inclusive (five years), 495 abortions, 2,343 pregnancies, only three perforations of the uterus occurred; 2 died (autopsy denied); 1, treated expectantly, recovered. By diligently searching the American, English, French and German literature from the year 1895 to 1907, inclusive, I have been able to collect 160 cases of uterine perforation due to perforating wounds, inflicted during the course of intrauterine instrumentation. In Rebreyend's Thèse (Paris, 1901, Les Plaies perforantes de l'utérus) will be found some cases not included in our table. They do not in any way confirm our conclusions. So as to more intelligently discuss perforations of the uterus, it is convenient to classify them into true and false perforations.

A. True perforations may be spontaneous; that is, they may occur without the aid of violence; may be secondary or consecutive; that is, they may follow an insult to the uterine tissues, be that insult chemical, thermic, bacterial, or traumatic in nature.[2 a, b] The perforation may follow immediately, or only become established after an interval of time. All uterine perforations due to perforating wounds are true perforations.

B. False, or pseudouterine perforations are not perforations in fact.[3 a, b, c, d] We will briefly discuss these pseudoperforations, and then eliminate them from further consideration in this paper. They have caused diagnostic errors, followed by such operative mistakes, as needless laparotomies, as unfortunate removal of intact uteri. The term pseudoperforation is used to designate a condition capable of conveying to the operator the impression that he has perforated the uterine wall, when in fact this mishap has not occurred. What, then, has occurred?

1. The uterine sound or other instrument may have slipped into a double uterus (uterus didephys).[4] It may have entered a uterus unicornis.

2. The instrument may have slipped into the dilated uterine end of a Fallopian tube,[5 a, b, c, d, e] very rare, or into the more developed horn of a bicornute uterus. Watkins,[5 b] after opening the abdomen, found that what he had diagnosed as the passage of the curette into the peritoneal cavity was the passage of the curette into the Fallopian tube. In Hind's case[5 c] the uterine sound was introduced into the uterus before incising the abdominal wall; after opening the abdominal cavity, it was seen that the sound had threaded the whole length of the Fallopian tube. It was presenting at the abdominal orifice of the tube. In Floeckinger's case[5 a] laparotomy showed that the uterine sound was in the oviduct. In Thorn's case[5 d] one uterus was myomatous, the other lateroflexed and lateroverted. In the case of myoma of the uterus, the uterine sound was introduced 14 cm., suddenly there was a lack of resistance, hasty removal of the sound. On opening the abdomen it was seen that the sound had penetrated a

distance of 3 cm. into the Fallopian tube. Ahlfeld[5 e] also reports a case in which, after laparotomy, it was seen that the left oviduct had been entered by a sound, introduced into the uterus. Nevertheless, this occurrence—the introduction, by way of the uterus, of any instrument into the Fallopian tubes—is very infrequent, so infrequent that its possibility has been denied by competent observers, because:

1. Under natural conditions, the lumen of the uterine end of the oviduct is so small that it is only with difficulty that one can introduce a bristle into it.

2. Under normal conditions, the broad ligaments and also the ovarian ligaments maintain the Fallopian tubes in a transverse position in the pelvis.

Lawson Tait was never able on the cadaver to sound the tubes through the uterus. He maintains that under normal conditions, it is impossible to introduce by way of the uterine canal an instrument into the normal Fallopian tubes. Catheterization of the tubes is more liable to occur in the presence of such pathological conditions, as uterine lateroversions and lateroflexions, after interstitial gravidity, after hematometra, etc.

3. The instrument may have slipped into a small cavity, which has developed in the interior of a uterine fibromyoma.

4. The sudden ballooning or relaxation[3 a, b, c] of the uterus may also convey to the operator the impression that he has perforated the uterine wall. There is such a condition as atony of the uterus. The fact that at all periods of sexual life the uterus has the property of alternate contractions and relaxations, is regarded as proved by all physiologists. Contraction and relaxation are properties inherent to all muscular tissue, and the uterine muscularis is not an exception to the general rule. Keiffer's experiments, bimanual examinations, etc., point to a more or less periodic variation in the tone of the myometrium.

During curettage one often notices a uterine lengthening of 1, 2 or 3 cm. It is no longer claimed, just because the curette in these cases is not kept in constant contact with the uterine wall, that these uterine lengthenings are instances of perforations of the uterus. They are evidences of uterine relaxation. The system of uterine blood vessels is adapted to expansions and contractions. R. de Bovis,[3 a] in *La Semaine Médicale,* Paris, 1906, vol. xxvi, p. 253, has an excellent and exhaustive article on pseudoperforations of the uterus.

Though this condition, pseudoperforation, is infrequent, its existence can no longer be denied. In Craig's case[6] the operator, supposing that he had perforated the uterus, opened the abdomen; he then found the uterus to be uninjured absolutely. In the case reported by N. Gheorghiu[7] the removed uterus showed no trace of perforation. Kossman[3 b] bears witness to similar facts.

Perforating wounds of the uterus, especially of the pregnant uterus, can be inflicted from above,[8] can occur during the course of a laparotomy, can be associated with penetrating wounds (gunshot wounds, stab wounds and similar injuries) of the abdominal wall, of the gluteal[9] and other regions; can occur during the course of delivery. Wounds so in-

reports a case in which, after laparotomy, it was seen that the left oviduct had been entered by a sound, introduced into the uterus. Nevertheless, this occurrence—the introduction, by way of the uterus, of any instrument into the Fallopian tubes—is very infrequent, so infrequent that its possibility has been denied by competent observers, because:

We will consider in this article only such perforating wounds of the uterus as are due to violence, inflicted from within the uterine canal; that is, only those perforating wounds in which the vulnerating agent has either been introduced through, or has traversed the uterine cervical canal, before perforating the uterine wall. The element of trauma is essential, is indispensable to the accurate conception of these perforations.

In the course of intrauterine instrumentation, diseased and healthy uteri[10 a, b, c, d, e, f] have been perforated and most disastrous results have ensued. Wounds of the uterus, like wounds of other organs or tissues, are solutions of continuity of tissue. They are always of sudden occurrence and are always due to the direct application of mechanical violence. To avoid misunderstandings a distinction must be made between penetrating and perforating wounds of the uterus. The former only enter the uterine wall; the latter traverse its entire thickness. Therefore, the distinctive characteristic of perforating wounds of the uterus is, that they involve the entire thickness of the uterine wall. All the coats, or rather layers, of the wall of the uterus are interested, the mucosa, the muscularis and the serosa (in those portions of the uterus that are covered by the peritoneum).

The uterine perforations discussed in this article were always consecutive to some intrauterine maneuver and always immediately so. In this class of uterine wounds, the vulnerating agent establishes a direct communication between the uterine and some adjacent cavity; the peritoneal cavity[11] almost always; rarely the vaginal[12 a, b, c] or the vesical cavity;[13 a] still more infrequently, the lumen of the gut. In other cases, the perforating instrument, after having pierced completely through a portion of the uterine wall not covered with peritoneum, enters the perimetrium connective tissues, penetrating between the folds of the broad ligaments (parametrium) (14, cases a, b, c). If the violence still continues to act, the vulnerating instrument may perforate one or both layers of this ligament and thereby also enter the peritoneal cavity (15, cases a, b). The perforating instrument may enter the vesico-uterine space (16, case a), may enter and lodge in the space of Retzius (17, case a), may enter and lodge in the Douglas cul-de-sac (18, case a). Traumatic perforation can involve any portion of the uterine wall. In my two cases (19) the perforation, as is usual, is almost always the case, involved the posterior wall; in Van Ripper's case (11) the rent was in the anterior wall; it extended from the fundus uteri to near the vaginal vault. In Harris and Whitney's case (20) the anterior wall showed a transverse rent about one and one-half inches in length. In Case 21 the uterus was perforated from horn to horn and the perforation was filled with omentum. In Case 14 b the perforation was situated at the anterior and left

lateral surfaces of the supravaginal portion of the cervix. In case 22 the perforation was also in the anterior wall. The perforation may be in the cervix uteri, as cases (12, a, b, c; 23); may be in the corpus uteri, or may involve both; may be single, may be multiple (they are most usually single); may be small, may be large, as in case (24) in which the midwife produced a uterine rent 20 cm. long.

In Ullmann's case (25) there were two perforations. In Schenk's case (26) there were three. In Werelius' case (27) the uterus contained seven punctures. The perforation may be barely visible; in one of my cases merely a subperitoneal ecchymosis was present; may be large enough to permit the escape of a large portion of the omentum and of intestines through the rent, as in Hessert's case (28), in which four feet of gut had been pulled through the uterine rent; as in Holmes' case (29) in which intestines were found between the woman's legs; as in Congdon's case (30) in which the operator after pulling 40½ cm. of intestine into the vagina, twisted them off. In Case 31 the operator kept on pulling intestines until he had drawn out six feet of bowel, which he cut off. This case terminated fatally. All the other cases mentioned above recovered. The perforation may be large enough to allow the escape of the fetal head into the abdominal cavity, Case 32; it may be large enough to allow the escape of the fetus into the peritoneal cavity, as in Whitney's case (20). In Tait's case (33), nine months after the date of infliction of the perforation, the tract of the curette could still be seen. The size and shape of the opening are to some extent dependent upon the size and the shape of the vulnerating instrument.

The perforation may lead to the formation of permanent abnormal channels of communication between the uterine and an adjacent cavity, as in Dr. Lobdell's case (13), in which the perforation of the uterus took place directly into the bladder and a permanent vesico-uterine fistula resulted; may lead to the permanent prolapse of a portion of the omentum into the uterine cavity (cases 31, a, b). Usually after the infliction of the injury the vulnerating agent is removed. In some of the reported cases, exceptional cases I admit, it was abandoned in place and was either expelled per vaginam or eliminated by the aid of a slowly ulcerative, suppurative or other pathological process through newly created avenues. The perforating body may be eliminated through the rupture of a near or a distant abscess, or may be removed at operation (cases 14 a, 35); or at autopsy (case 36). In one of Treub's cases (17) the bougie was embedded in a retro-uterine abscess. In his other case (17) he removed by an incision the perforating catheter from the space of Retzius. In Johnson's case (37) the patient was laparotomized and the bougie, cause of the perforation, was found to be almost entirely folded in and covered by the omentum, an evidence of the effort of Nature to repair the damage and to prevent injury of the abdominal viscera. In Thorn's case (18) the perforating bougie, after the patient had been laparotomized, was found lying obliquely in Douglas' cul-de-sac. In Talmey's case (10, f) the perforating bougie was found lying in front of the proximal edge of the right kidney. In Bullard's case (38) the crochet hook was discharged

through the anterior abdominal wall. It did not interfere with the continuance of gestation. In Perl's case (24) the needle or trocar that had perforated the uterus was removed some time after from an abscess in the right inguinal region, where it had become encysted after its passage through the uterine wall. In Fairchild's case (39) at the laparotomy the hairpin was found high up in the abdominal cavity near the diaphragm. In Patru's case (14 a) the perforating catheter was found embedded in an abscess palpable through the anterior rectal wall. By means of an incision made in the anterior rectal wall all the pus was evacuated and the bougie removed. In Marchand's case (40) a Hegar's metallic dilating bougie, No. 12, perforated the uterus and was abandoned in the patient's body. After about a year of invalidism she was laparotomized and the sound was found between two folds of mesentery. It was removed; recovery ensued.

Any instrument that can be used or misused in the uterine cavity is capable of perforating the uterine wall. All forms of uterine sounds, of uterine dilators, of curettes—the St. Cyr auger (41, a, b) curette included—can be incriminated. In the case of 41 b thirty-one inches of gut had been torn away by the auger curette. In the cases reported during the last ten years it is stated in unmistakable terms that the vulnerating instrument was:

1. Uterine douche tube, irrigator, catheter; 12 cases.
2. Uterine bougie, uterine sound, 17 cases.
3. Uterine dilators, 31 cases.
4. Uterine curette, 44 cases.
5. Miscellaneous agents, 50 cases.

In other cases the offending agent is either not stated or happened to be either a probe (case 38), a wire (case 39), a meat skewer (case 15, b), an electrode (case 18).

Perforating wounds of the uterus are always of accidental occurrence. Nowadays they are never intentionally inflicted. They have occurred in the hands of the most dextrous, of the most clever operators. The accident has occurred to Lawson Tait (case 33), Auvard (Paris) (case 42) had one perforation in 270 uterine curettements. It can not be stated that they are always due to ignorance, to incompetence, to carelessness; but it can be said that in the hands of the novice, in the hands of the careless, in the hands of the surgically unclean, all intra-uterine instrumentations are dangerous. It can also be stated that in most of the cases in which death has followed upon uterine perforation the perforating instrument had been introduced for criminal purposes. In 26 of the cases analyzed in the preparation of this article the perforating instrument was introduced to end an undesired pregnancy. In some of the fatal cases where the perforating instrument was not introduced for criminal purposes it has been guided by unclean hands.

In 1873 L. E. Dupuy (43) said: "I have found reported 17 cases in which the uterine wall has been perforated from within. In some of these cases the uterus had been perforated at more than one point. All

these patients made uneventful recoveries. In none were any measures taken either before or after the accident to prevent the development of complications."

In 1878 Carlo Liebman (44), in reporting two cases of uterine perforations, treated expectantly and terminating in recovery, reviewed the subject quite exhaustively. In his article Liebman makes the following statement: "In not one of the cases reported in the medical literature, and they exceed thirty in number, was the perforation of the uterine wall followed by alarming symptoms."

Liebman compares the accident to paracentesis, to exploratory punctures of organs, procedures which are generally considered harmless. Lenoir (45) says: "These perforations have proved interesting to us, not only on account of their frequency, but also on account of their innocuousness."

Lawson Tait (33) has never seen any ill results follow perforation of the uterus by a uterine sound. In not one of the reported cases in which the perforating instrument was a sound did death occur. The sound is a much less dangerous instrument than the curette. It makes a smooth hole while that made by the curette is apt to be ragged.

The aforementioned authors concluded from their study of the literature and from their personal experience that perforated wounds of the uterus are relatively benign, are unattended with danger. Their opinion is erroneous and is completely disproved by the study of the literature of the subject published during the last twelve years.

The dangers of perforating wounds of the uterus are manifold. Independent of the danger of shock, there is the danger of hemorrhage into the pelvic and general peritoneal cavities, into the pelvic connective tissues; of injuries to the peritoneum; of injuries to the intra-abdominal organs, etc. In 23 of the fatal cases it is definitely stated that a diffuse suppurative peritonitis was present. There is the danger of traumatizing the omentum, of traumatizing the intestines. In 35 cases it is stated that positive injury was inflicted to the intestines or to the omentum. Any of these dangers can prove fatal. In Donald McCrae's case (10, b) the patient bled to death. She died three hours after the infliction of the perforation. The uterus in this case showed practically no pathology. Several months before patient had had a miscarriage. At the time of the perforation twenty-eight inches of intestines were pulled out through the perforation and twisted off by actual force. Shock, hemorrhage, visceral injuries and infection may be associated in the same individual case. If a larger tear has been made in the uterus there is danger of a loop of intestine or of a part of the omentum slipping into the rent and becoming strangulated (cases 11, 20). The gut may only be incarcerated, not strangulated, in the rent (case 46). In Kustner's cases (34, a and b) the omentum escaped into the uterine cavity. Following these two (Kustner's) unrecognized cases, prolonged and irregular uterine bleeding occurred. Eventually vaginal hysterectomy was done in both cases, and on section each uterus was found to contain grape-like pieces of omentum. The omentum may plug the uterine perforation (21, 47). In cases of

perforation of the posterior wall of the uterus near the fundus, if the omentum hangs low into the pelvic cavity, it is very liable to become entangled in the curette and drawn through the perforation into the uterine cavity, even into the vagina. If the patient recovers from the perforation the site of the cicatrix apparently does not interfere with the subsequent development of pregnancy, as evidenced by Cases 22, 27, 28, 47, 48, 49, 50. In one case (27), though the uterus had been perforated at seven different places, patient subsequently became pregnant and was delivered of a living child. In one case (47) the site of perforation was sought at the time of delivery in a subsequent pregnancy. No trace of it could be found. Hönck's case (51) is the only case reported in which the perforation is said to have enlarged at a subsequent pregnancy and to have complicated delivery.

How can the frequency of these perforations be lessened? How can the morbidity and the mortality incident to their occurrence be lessened?

A. By the non-employment of inappropriate or defective instruments.

B. By never entering the uterine cavity in the absence of indications.

C. By never entering the cavity of the uterus in the presence of contraindications, such as pus in the Fallopian tubes, the ovaries or around the uterus; in acute gonorrheal endometritis; in acute septic endometritis, etc. The existence of an extra-uterine pregnancy contraindicates uterine curettage.

D. By perfecting our surgical technic.

E. By familiarizing ourselves with the conditions that predispose to the occurrence of uterine perforation. For instance, in removing pedunculated uterine submucous fibroids the peritoneal cavity is liable to be opened, as in Cases 46 and 52 a and b.

In a few words, by keeping in mind in connection with intra-uterine work, that there are: Dangerous instruments, dangerous uteri, dangerous maneuvers.

The use of placental forceps in the uterus by inexperienced hands is always dangerous. It is needless, as the finger can do more effective work. Even the finger has difficulty at times in differentiating between placental tissue, blood clot and intestines. The uterine sound or hysterometer is an instrument of very little usefulness. In most cases the size, mobility and position of the uterus can be better and more safely determined by bimanual vagino-abdominal examination. Laminaria tents should be always as long as the uterus; otherwise the lower end of the laminaria, instead of projecting a little below the external os, is liable to slip into the uterine cavity. Should, then, the long axis of the laminaria not remain exactly in that of the uterine cavity, the lower end of the tent becomes impinged against the uterine wall. The uterine contractions may drive that end partly or entirely through the uterine wall. The use of laminaria tents produces a more gradual dilatation of the cervical canal. This is an advantage which, in our opinion, is counterbalanced by the fact that the patient has sixteen to twenty-four hours of pain. We believe that the tupelo tents can with advantage be banished from the gynecologist's

armamentarium. The danger of infection from the use of tents is great (Dudley, Chicago; Kelly, Baltimore).

The three-bladed steel dilator is considered dangerous. It has been nicknamed "the perforating dilator" (case 53). Its use is to be discouraged. Hegar's graduated metallic dilating bougies are serviceable. Their function is to dilate the cavity of the cervix uteri, not that of the corpus uteri. It would be advisable that they be marked off in centimeters so that the operator would know at all times how deeply they are introduced. Whenever the fundus uteri is perforated by a Hegar dilator the operator is to blame.

As to uterine curettes, there does not seem to be any pattern which can not, suitable conditions being present, determine a perforation of the uterus. The blunt and the sharp, the fenestrated and the non-fenestrated, the even margined and the sinuous margined curettes are each reported as having perforated the uterine wall. It is better to use a curette, the shank of which may be bent like a probe, so as to be made to conform to the direction of the uterine canal. A curette which is pliable and curved and broad above is less liable to cause perforation than one which has a narrow upper end and which is rigid and straight. Some models of fenestrated curettes are very apt to catch muscular tissue.

The introduction of the finger or of instruments in the uterine cavity should not be regarded lightly. With but few exceptions, all these perforations have occurred during the operation of dilatation of the cervical canal or during that of curettement of the uterine cavity. These two operations, cervical dilatation and uterine curettage, when performed with due precautions as to asepsis, as to preoperative preparations of the patient, such as emptying of the lower bowel and catheterization of the urinary bladder, are relatively of great simplicity of technic, of great benignancy and of great efficiency. Following their performance, judicious after-treatment is of great importance and should not be overlooked. These two operations should not be performed indiscriminately; should not be performed in the absence of positive indications. They are better performed with the aid of an assistant.

The indications for dilatation of the cervical canal are:

1. As a preliminary measure to (a) intra-uterine explorations, (b) uterine curettage and other intra-uterine maneuvers.

2. As a therapeutic measure in dysmenorrhea.

Dilatation or divulsion alone is not to be considered a specific for dysmenorrhea. A considerable number of cases of dysmenorrhea are not in the slightest degree benefited by this operative procedure. In the marked dysmenorrhea, at times associated with uterine anteflexion, Dudley's operation will be found very serviceable. In dysmenorrhea, due to stenosis of the external os, Pozzi's operation is valuable. Dilatation alone is valueless in the treatment of dysmenorrhea due to any of the various malpositions of the uterus. We must treat the cause or the causes which determine the occurrence of the symptom: dysmenorrhea.

The indications for uterine curettage are:

1. To remove placental débris, etc. In this connection let us state that in the opinion of such men as Coe, Pinard, etc., the aseptic finger is the best instrument to introduce into the puerperal uterus for the purpose of removing decidual remnants and blood clots. Pinard, for the postabortum or postpartum removal of placental débris, rejects the use of the curette and teaches that in all cases of retained secundines the finger should be employed. He considers it safer and more thorough. There are limits, however, to the power of the human digits, and at times the curette will be found a valuable auxiliary to the finger. For the exploration of the uterine cavity, the finger, by virtue of its tactile sensibility, is far superior to any instrument. The curette is a blind agent (Le Page, Pinard, Budin).

2. As an aid to diagnosis in decidual endometritis, uterine tuberculosis, carcinoma, chorion-epithelioma and other intra-uterine neoplastic or inflammatory processes, the use of the curette as a diagnostic aid is a recognized and sanctioned procedure. When carcinoma of the corpus uteri is suspected the curette must be used with great precaution and only to remove small pieces for diagnosis. Again in those cases where curettage has been previously performed, great care, great gentleness, is necessary because it sometimes happens that the uterine wall has been previously too deeply scraped and then the danger of perforating this organ is imminent (54, 55, a, b).

3. To remove abnormal endometrium, causing dysmenorrhea and sterility; to induce involution of the uterus. As to whether it is wise to curette an empty septic uterus following on labor or abortion clinicians differ. Naturally if the uterus contains retained placental tissue this must be removed. If the curette is used, venous sinuses and lymphatic channels are opened and the protecting barrier of leucocytes is interfered with and possibly removed in places. Further, the Fallopian tube may thus also become infected.

4. To remove the remains of a mole pregnancy.

5. In the treatment of inoperable carcinoma of the cervix. In this condition septic absorption is one of the common causes of immediate distress; curetting the fungating mass and subsequent treatment of the raw surfaces with strong formalin frequently does away with sepsis, hemorrhage and pain.

C. What are some of the contraindications to utero-cervical dilatation or to uterine curettage? a. The absence of a positive indication. b. The presence of a suppurative process, either in the uterus, in the uterine adnexæ, in the parametrium, or in any other pelvic organ or structure. c. The presence of such conditions as phlegmasia alba dolens, of uterine or peri-uterine thrombophlebitis. The curette is liable to disturb the thrombi in the uterine veins, at the placental site or in the plexus pampiniformis (Byron Robinson).[56]

D. By perfecting our surgical technic, the occurrence of this accident, perforation of the uterus, will become a rarity. Before undertaking any intra-uterine maneuver, determine: a. By vaginal examination. b, By bimanual, vagino-abdominal examination:

1. The presence or absence of adnexal or periadnexal disease. Curettement has determined the rupture of tubal, peritubal, ovarian, peri-ovarian and peri-uterine pus collections. Even the pulling down of the cervix by tenacula has ruptured pus collections.

2. The size, the shape, the mobility and the consistency of the uterus. If the uterus be bound down or immobile as a result of adhesions due to previous pelvic inflammatory processes, it is far more liable to be perforated. Under such conditions it does not yield to the impact of the uterine instrument, it does not accommodate itself to the pressure exerted by the sound, curette, etc.

3. The presence or absence of tumors upon or within the uterus.

4. Some operators further recommend that the depth and the direction of the uterine cavity be determined by the careful use of the graduated uterine sound or by the hysterometer and that any deviation from the normal be noted. The use of the uterine sound as means of ascertaining the depth and direction of the uterine cavity is condemned by most operators. They rightly claim that the same information can be more safely determined by bimanual vagino-abdominal examination. In Case 57a the uterus was anteflexed; in Cases 12c, 57b and 58 a, b, it was retroflexed. In Case 59 it was retroverted; in Case 45 it was anteverted; in Case 60 lateroflexed. All malpositions, congenital or acquired, of the uterus, if unrecognized, predispose to perforation during the course of intra-uterine maneuvers. Malposed uteri are most frequently perforated opposite the point of angulation. The nutrition of the uterine tissues being impaired at the point of flexure explains the not uncommon occurrence of perforation also at this point. In the retroflexed uterus it is the anterior wall which is the more liable to be perforated; in an anteflexed uterus the posterior wall.

5. Get a mental picture, as clear as possible, of the pelvic organs. Having a definite mind picture of the pelvic conditions existing in the individual case, if uterine perforation occurs it is more immediately recognized and one desists from further intra-uterine instrumentation. For instance, suppose that in a given case the uterus has by examination been determined to be normal in size, in volume and in position, and that during the introduction of the uterine instrument the latter slips much to one side of the median line and to a depth greater than that of the uterine cavity, perforation will then immediately be diagnosed.

6. Observe the most rigid asepsis during the course of the operation and see that from the standpoint of asepsis and antisepsis the patient has been prepared as carefully as though you were going to perform a laparotomy. A complication, necessitating a laparotomy, may suddenly arise during the course of intra-uterine maneuvers. In uterine wounds. be they inflicted by the sound, by the uterine dilator, or by the curette, you must minimize, you must avoid the liability of implantation of infection. Not much can be done to cure existing infection. Much can be done to prevent the occurrence of infection. The endometrium sits directly on the myometrium without an intervening submucosa to check endometrial infectious invasion.

Chief among the pathological states that predispose to the occurrence of perforating wounds of the uterus are the following:

a. The changes (hyperemia, softening, etc.) present in menstruating, in pregnant, in puerperal and in postabortum uteri. Perforation is favored by the peculiar state of the muscular tissue of the puerperal uterus. In curetting congested, softened uteri, such as are met after abortion and after childbirth, no attempt should be made to elicit the uterine "cry" (*le cri uterin*) (case 61); that is, the peculiar creaking noise due to the forcible scraping of the uterine wall by the curette. In these cases, owing to the softness and friability of the uterine wall, this sound is not obtainable.

b. Atrophy of the uterus (63). All the different forms of uterine atrophy of themselves cause a weakening of the uterine wall and, therefore, can be looked upon as conditions predisposing to uterine perforation. Atrophy of the uterus has been observed in some chronic diseases, as in pulmonary tuberculosis, occasionally in diabetes, in leukemia, in chlorosis, in pernicious anemia, in Addison's disease, in Basedow's disease, etc. It is stated also that in certain acute infectious diseases, such as typhoid fever, a marked atrophy of the muscular tissues is noted.*

We will enumerate the main histo-anatomical changes that have been noticed in senile atrophy of the uterus and those found by Emil Ries (Chicago) in some cases of marked atrophy following puerperal infection.

The changes found in senile uteri are: a. Atrophy of the mucosa and of the muscle fibers. b. The relation in amount normally existing between the connective tissue and the muscular tissue is altered considerably at the expense of the latter. c. Vessels are sclerosed. Case 33 was a senile uterus. It was also the seat of myomata.

Emil Ries, Chicago, in some cases of extensive atrophy of the uterus following puerperal infection, found: a. Absence of mucosa. b. Hyaline degeneration and thrombosis of the vessels. c. Degeneration and necrosis of the muscularis.

Malignant neoplastic diseases of the uterus are numerous. The cases of carcinoma or sarcoma of the uterus, in which perforation of the uterus has resulted from slight mechanical stress, are numerous. Efforts in the presence of malignant disease of the uterus to obtain material for microscopical examination, if brutal, may prove disastrous. Malignant disease of the uterus may give rise to spontaneous perforations (65).

Inflammatory processes in the uterine tissues may be localized; may be diffuse. Like inflammatory processes elsewhere, they are destructive in nature. Whatever be the nature of the inflammation, acute or chronic, or the site, be it located in the mucosa, in the muscularis or in the connective tissue, it invariably weakens the resistance of the uterine wall. Case 66 was a case of myometritis edematosa; Case 67 a case of endometritis fungosa. In Case 68 sutures from a previous operation were suppurating their way through the uterine wall. Prolonged septic proc-

* There are other unusual pathological states of the muscular uterine wall that predispose to perforation, such as, for instance, existed in Halban's case (64) and in others. Lack of space forbids us to discuss them here.

esses predispose to uterine perforation. Tubercular uterine inflammation by leading to abscess, to cavity formation, can of itself cause uterine perforation.

Inflammation of the uterus may terminate in resolution, in ulceration, in suppuration or in gangrene. We will briefly consider abscess (69, a, b, c) of the uterus and also gangrene of this organ, as several instances will be found in our tables where these conditions, either together or separately, were present. The occurrence of abscess of the uterus is no longer contested, as many of the cases reported have been amply verified (70, a, b, c). Uterine abscesses may be acute, subacute or chronic; may be primary or secondary. In the primary form the pus collection has its starting point as such in the uterine tissues; in the secondary form the suppurative process starts in neighboring tissues and invades the uterus by extension through contiguity of tissues. In the first form, at the beginning, if not throughout its entire course, the pus collection is entirely circumscribed by uterine tissue; in the secondary form it is partly surrounded by the uterine tissue, partly by other tissues.

In number these abscesses may be single, may be multiple. In location they are either submucous, intramuscular or interstitial or subperitoneal. Their site may be in the anterior wall (70, c), may be in the posterior wall (70, b). Uterine abscesses are always due to infection; a pathological surgical or traumatic solution of surface continuity of the uterine mucosa serving most frequently as the portal of infection. Any pyogenic organism, facultatively or habitually so, can be the causative germ. Tubercular abscesses have been reported. In Menge's case (69, b) gonococci were detected in the pus. Nevertheless, the ordinary pyogenic cocci are the most frequent offenders. The germs are either implanted in the uterine tissues by a vulnerating instrument or may be conveyed to the site of abscess development by the lymphatic vessels. Rarely the abscess is embolic. The abscess may be secondary, by continuity of tissues, to an infective uterine thrombophlebitis (infective thrombophlebitis, suppurative peri-thrombophlebitis, abscess). The liability to the latter (septic thrombophlebitis) occurrence during postabortum period is well known.

All uterine abscesses impair the solidity of the uterine wall. They predispose to traumatic perforations, as the abscess site forms a circumscribed area of lessened resistance. They may rupture spontaneously into the rectum (Bird's case, Schroeder's case); into the bladder (Berrut's); into the uterine cavity; into the peritoneal cavity, etc. They may give rise to spontaneous perforation, as when the abscess ruptures both into the uterine cavity and into an adjacent cavity or space. We have in the case reported by Porak (70, a) an instance of spontaneous uterine perforation due to an abscess. This was a case of puerperal sepsis. The uterus contained several abscesses, one of which had ruptured both into the uterine and into the peritoneal cavities. In one of Mauclaire's cases (71) at the seat of perforation there was an abscess which extended nearly to the peritoneal coat.

Another possible termination of uterine inflammation which predisposes to perforation is gangrene. Uterine gangrene may be circumscribed, may be general; may involve the entire thickness of the uterine wall, may only involve a part of its thickness; may be due to traumatic, inflammatory, neoplastic or to chemical causes. It may be secondary to criminal or other intra-uterine maneuvers; it may be spontaneous. Gottschalk (72) reports a case of gangrene of the uterus (puerperal sepsis) in which the necrotic tissue represented the whole uterine mucous membrane and a portion of the muscular walls. He thinks that in this case the gangrene was due to intra-uterine injections of 60 per cent. alcohol. Cases of gangrene, due to contact of caustics with the uterine wall, are reported. Gangrenous metritis is a condition which predisposes to traumatic uterine perforation, which may result in spontaneous perforation. Beckman, of St. Petersburg, noted this grave complication six times in forty cases of metritis dessicans. Metritis dessicans is the condition which we now designate as gangrenæ uteri puerperalis. It may be partial, it may be total, it may be perforating.

On examining the removed uterus it is at times difficult to determine if the perforation is secondary to the gangrene, or if the gangrene is secondary to an inflammation started by an instrument which has penetrated the uterine wall (73). In Winter's case (74) the gangrene was secondary to a perforation. It was located on the posterior wall; there was a marked predominence of saprophytic germs. The inflammatory gangrene enlarges the traumatic lesion and may lead one to think that the perforation is spontaneous in origin. Magrier (75) reports two cases of postabortum gangrene. Each had led to a uterine perforation. Trauma as a factor was absent in both. K. Schmidlechner (76) reports a case of gangrene uteri puerperalis involving the entire cervical wall and the lower one-half of the muscular wall of the body of the uterus. In removal of the uterus the cervix was perforated.

CONCLUSIONS.

1. Pseudo perforation of the uterus, though of exceptional occurrence, is a condition that occasionally confronts the surgeon.

2. Spontaneous perforations of the uterus, due to pre-existing pathological conditions of this organ, can and do occur.

3. Perforating wounds of the uterus, be they intra-peritoneal, extra-peritoneal, have a morbidity, have a mortality. This morbidity, this mortality, increases in direct ratio with the inexperience, the carelessness, the surgical ignorance and the surgical uncleanliness of the operator. The expert recognizes at once the making of a false passage and institutes proper treatment. High surgical skill may convert (as a consultation of the articles enumerated at the close of this article amply demonstrates) an apparently hopeless case into a recovery. In the 154 reported cases there were 42 deaths, 108 recoveries. The result is not stated in 4 cases. Expectant treatment was pursued in 66 cases. There were 21 deaths in this series. Laparotomy, including what intra-abdominal repair work appeared necessary to the operator, was performed 72 times. There were 52

recoveries, 17 deaths and 3 unstated results in this series. Vaginal hysterectomy was done 15 times. There resulted 10 recoveries, 4 deaths and 1 result not stated.

4. Dilatation of the cervical canal and instrumental curettage of the uterine cavity are, owing to their associated dangers, not office operations. During the performance of either of these two apparently danger-free operations the operator may be confronted by accidents, the meeting of which requires the highest surgical skill. In their performance, if an anesthetist be available, the employment of general anesthesia (in the absence of contraindications) is highly desirable; in fact, the rule should be

a. No uterine curettage without general surgical anesthesia. It is easy to conceive how an unanesthetized patient can, by injudicious jerks or movements, perforate her own uterus by impaling it, by spiking it upon the intra-uterine instrument. Anesthesia permits the operator to depress the abdominal wall, to locate. to fix if necessary the fundus uteri.

b. No curettage without ample cervical dilatation. A non-dilated cervical canal interferes with the tactile sense and thereby with the proper maneuvering of intra-uterine instruments. Steady the cervix before beginning the dilatation of the canal.

5. Intra-uterine instrumental maneuvers should only be attempted by those:

a. Who are thoroughly conversant with modern surgical asepsis and antisepsis. The absence of bacteria on the perforating instrument minimizes very much the dangers of perforation. Infection has immediate, has late dangers. In an uncomplicated perforating wound of the uterus the traumatisms of the uterus play but a secondary rôle; the pre-existence or the implantation at the time of perforation or subsequently of infection commands the situation.

b. Who are capable of recognizing malpositions of the uterus as well as pathological conditions of that and of neighboring organs. Even the bringing of the cervix to the vulvar outlet may disturb peritoneal adhesions, may rupture pus pockets.

c. Who are acquainted with the treatment of the dangers incident to the successive steps of the intra-uterine operation which they are performing. The steel dilator is an instrument of too much power, and the curette is too dangerous a weapon to be used by the novice, by the inexperienced.

6. Once the uterus has been perforated all further intra-uterine instrumentation must be suspended. If it be imperative that the contents of the uterine cavity be removed, this must be done by digital curettage, or it may be done with a curette, whilst the uterus is being watched from above, through a laparotomy incision.

7. A perforated uterus should never be mopped or swabbed with caustics or irritating antiseptics. It is needless, it is dangerous. In two cases (38, 77) it is distinctly stated that the uterine cavity was swabbed. Both cases died. In each carbolic acid was used.

8. A perforated uterus should never be irrigated. In 17 cases in which it is stated that the uterus was irrigated during the course of perforation or afterward there were 6 recoveries (cases 17, 49, 57, 78, 79) and 11 deaths (22, 63, 47, 80, 81, 83). In two of the recoveries (Cases 39, 57) convalescence was delayed by mercurial poisoning, due to the sublimate solution that had been used for uterine irrigation. In Case 78 one ounce of 1 per cent. aqueous solution of creolin entered the peritoneal cavity. Brothers in his report of Case 22, in which the perforated uterus was irrigated, states, "I have never seen a case of greater physical suffering in my life." The great danger attending intra-uterine irrigation in these cases is the conveyance, the diffusion by the irrigating fluid, of septic material from the uterine into the peritoneal cavity or other space. Owing to the great absorptive power of the peritoneum the danger of chemical intoxication is also present. Every case in which it is definitely stated that the perforated uterus was not irrigated recovered; 10a, 12c, 19, 22, 29, 31, 33, 47, 67, 71, 85, 86a.

9. Vaginal hysterectomy is an operation not to be performed in the treatment of perforating wounds of the uterus. It calls:

a. For the sacrifice of an organ which may not be perforated.

b. For the sacrifice of an organ which, though perforated, most always can, with little difficulty to the operator and with much advantage to the patient, be saved.

c. It does not enable the operator to either exactly determine the presence or absence of other co-existing intra-abdominal vascular or other lesions, nor does it not enable him to repair them.

10. If the perforated wound has been inflicted upon a non-septic uterus during the course of an aseptic intra-uterine maneuver, in the absence of complicating abdominal lesions, recovery is the rule.

11. The treatment of perforating wounds of the uterus is determined largely by the following conditions:

a. The septicity or asepticity of the uterus and of its contents.

b. The septicity or asepticity of the perforating instrument.

c. The presence or absence of co-existing vascular, omental or intestinal lesions.

d. The size and the number of the perforations. A piece of omentum may prolapse through a large rent. A coil of gut may become incarcerated or strangulated in a large perforation.

12. Treatment:

a. If the uterus be non-septic, if the perforating instrument be aseptic and if it can also be reasonably assumed that there is an absence of omental or intestinal or important vascular lesions, the treatment to be followed is one of "armed expectancy." The patient must be confined to bed and immobilization enjoined for at least three days. The patient's pulse, temperature, facies and abdomen must be carefully watched. A suppurative peritonitis, circumscribed or diffused, a suppurative cellulitis, signs of internal hemorrhage, etc., call for intevention. A wick of gauze may be inserted into the uterus, but it should not be introduced much beyond the internal os.

b. In all cases in which there has been a prolapse of the omentum, or of intestines into the uterine cavity; in all cases in which associated injuries of the intestines or omentum co-exist, or in which there are reasons to fear a significant internal hemorrhage, laparotomy is urgent.

c. Once the abdominal wall has been opened the visceral lesion must be repaired. The uterine puncture, if small, need not be sutured. If large (when the perforation is large, you can not depend upon the contractility of the uterine muscle to entirely occlude it) if of the nature of a tear, of a laceration, it is better that it be sutured. One or two layers of sutures may be used. Whether small or large, if the perforation be the seat of hemorrhage, suturing is indicated. In the following cases the operator deemed it wise to suture the perforation: Cases 10a, 14c, 20, 22, 31, 47, 50, 87, 88, 89a, 89b. All these cases recovered, excepting Cases 10a, 20, 89a; complicating intestinal lesions, necessitating resection of gut and enterorrhaphy were present in each of these three fatal cases. Some operators, as Jarman (case 84) made use of both superficial and deep sutures. Some clinicians recommend that a laparotomy be performed for all perforating wounds of the uterus. They base their teaching upon the following considerations:

(a) That the exact size of the perforations is not known.

(b) That hemorrhage may be taking place from the peritoneal surface of the wound.

(c) That in the absence of a laparotomy we can never tell with certainty whether any other intra-abdominal organ is injured.

13. A healed perforation of the uterus apparently does not interfere with the normal development and the normal termination of a subsequent pregnancy.

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LEFT NEPHRECTOMY FOR HYPERNEPHROMA.

REMARKS ON THE METHODS TO DETERMINE THE PRESENCE AND FUNCTION OF THE OTHER KIDNEY; THE OBLIQUE MUSCLE SPLITTING INCISION IN SELECTED CASES PERMITS THE OPENING OF THE PERITONEAL CAVITY AND TO ASCERTAIN THE PRESENCE, SIZE AND SHAPE OF THE OTHER KIDNEY.*

VICTOR J. BACCUS, M.D.

CHICAGO.

Mr. President and Members of the Society: Permit me to present for your consideration the following case of hypernephroma:

Mr. L. M., aged 43; family history negative. Personal history: Neisser's infection 18 years ago; lues infection 15 years ago. Present illness: The patient has had the best of health up to April 2, 1908. Weighs 212 pounds. (a) About April 1, 1908, on urinating he noticed that the urine was of a plum color. As he was well, he paid no attention to it. April 2, at about 2 p. m., he was seized with a pain with the maximum of intensity in the left inguinal region running parallel with the inguinal canal, ascending along the ureter as high as the left kidney. This pain was very severe, and lasted until 5 p. m. He was obliged to retire to his bed and required morphin and local applications to control the pain. No other symptoms or signs present. The next morning he was able to resume his work.

(b) Three weeks later he had another similar attack of pain, lasting about three hours. Additional symptoms appeared; he was nauseated, and the pain felt in the left kidney region radiated toward the epigastrium. Three hours after the onset of the pain he had a severe hematuria, which lasted from four to six hours, urinating frequently and voided large quantity of bright red blood. No clots. During this attack he was under the care of Dr. C. Vermeren, who made a diagnosis of stone in the kidney or a renal tumor. The microscopical examination of the urine showed a great number of red blood cells, albumin, pus cells, no casts. To exclude gumma he was now instructed to take a very aggressive course of antispecific treatment, which was carried out for five weeks, with negative results.

* Read before the Chicago Medical Society (Presentation of Cases), Nov. 25, 1908. For discussion, see page 212.

(c) He remained well for five weeks, and then the third attack appeared. During this attack the pain was more severe, and the bleeding greater and lasting longer, ten to twelve hours. During these attacks he has never had any chills, no fever, no loss of weight. On about the 15th of May he was seen by Dr. Vermeren and myself and was recommended to enter the Policlinic Hospital for a thorough study of the case.

Examination.—The patient weighs 212 pounds; no superficial evidences of syphilis; chest and abdomen negative; the kidney is not palpable; no pain or tenderness over the left kidney; no enlargement of the organ to be made out. The skiagrapher tells us that at the site occupied by the left kidney there is a large mass. On account of the skiagraphic information, Dr. C. Vermeren believed the patient had a renal tumor. Urinary findings: Secrete about 60 ounces in 24 hours; very opaque; reaction neutral; contains red blood cells in great number, a few pus cells, no casts, and traces of albumin.

Cystoscopy. It was impossible to introduce the smallest of filiforms into the bladder, on account of a deep-seated stricture which had become aggravated during these attacks of renal colic. The functional test of Voeckler and Joseph did not give us any information, as the color of indigo-carmin could not be made out. With the phloridzin test of Casper and Richter modified by Kapsammer, which produces an artificial glycosuria, the sugar appeared forty minutes after the injection, a delay of about fifteen minutes. Cryoscopy being so unreliable, it was not carried out.

Diagnosis.—(a) The findings are in favor of a renal tumor, viz., severe hematuria, renal colics and the skiagraph showing an enlargement of the kidney and the abscence of a renal calculus. Gumma was excluded on the ground of the patient's good condition, the absence of any other symptoms of syphilis and the negative results obtained with the antispecific treatment.

(b) Possibly the second kidney has a good functional capacity. This conclusion, which later proved to be correct, was based on the health of the patient and the quantity of urine voided. For if he possessed only one kidney and the latter was invaded by a tumor, we believe the patient would have shown other signs of urinary difficulties, viz., a deficient amount of urine.

The patient was advised that the only hope lies in the operative treatment, and that it must be instituted at once. Operated June 12; left the hospital June 20, and resumed work August 20. While operating, those present, namely, the interne, Drs. C. Vermeren and Ritter, assisting, and myself, took special notice of the great friability of the kidney tissue and the tumor, and a great tendency to bleed. The renal vessels were reached and clamped. The ureter clamped, crushed, and ligated with catgut at about the brim of the true pelvic inlet. The cavity left by the removal of the tumor oozed freely and required packing with gauze, which was removed on the fifth day. The wound healed by primary union, with the exception of a small sinus which persisted and showed a tendency not to heal. On July 25th we injected this sinus with E. Beck's bismuth paste No. 1, one ounce under low pressure. After injecting about half an ounce, the patient complained of a pain in the groin, and expressed a desire to urinate. It alarmed him very much when he urinated the paste, which had found its way into the open ureter and into the bladder. The paste injection was discontinued, the wound dressed with slight packing for three more weeks, and then healed. In the future I would use chromic catgut for the ureteral ligation. At present the patient is perfectly well, normal weight, and the function of the remaining kidney equals that of both kidneys.

Recapitulating the symptomatology and course of the growth up to the time of removal, we note, first, the tumor reached a considerable size without causing any symptoms; second, the patient retained his normal weight; third, the important clinical symptoms were: discoloration of the urine, attacks of renal colic, the maximum of pain being felt

in the inguinal region, hematuria, and the skiagraph showing the enlarged renal mass.

Hematuria is an important clinical symptom for differential diagnosis, if observed early. It is either spontaneous or following a cause (trauma, palpation, etc.). The quantity of blood varies in different individuals, and in the same individual at different times. Usually the blood is mixed with the urine, but it may also appear in thread-like clots. As to the frequency of hematuria, the reports vary. P. Wagner observed it in 80 per cent. of his cases; Israel in 92.1 of malignant kidney tumor; Albrecht only in 11 of 28 cases, or 39.3 per cent. The hematuria may last a long time, as reported by the following authors: Grawitz, 5½ years; Bruse, 6 years; Manasse, 5 years; Luborsch, 3 years; Hildebrandt, 8 years.

Kuznik claims the spontaneously beginning and suddenly stopping hematuria to be the first sure sign of a hypernephroma, especially if the urine is colored uniformly or shows worm-like clots, with long thin impression.

The pain is as important an early symptom as the hematuria. Cachexia, unlike carcinoma and sarcoma, is frequently absent. This statement also applies to some cases with metastasis. Albrecht writes that hypernephroma may exist for years and cause no cachexia. Kuster claims the right kidney is most frequently affected, but Albrecht in 28 cases observed 19 were in the left kidney. Solms (1904) writes that he found only one case (2½ years old) reported younger than 35 years of age.

E. Hoffmann states that malignant hypernephroma may not cause any of the cardinal symptoms, and that the symptoms and signs of metastases are the first manifestation of the hidden serious renal growth. A peculiarity of hypernephromas that differentiates them from all other malignant tumors is, according to Albrecht, the formation of single bone metastases by the way of the circulation. Hoffmann reports two such cases; Israel one case; Albrecht four cases, and Halstead one case.

The prognosis can not be made with any degree of exactness, for the opinions regarding the benignity and malignancy of a hypernephroma differ. Solms believes that every Grawitz tumor is malignant. Kroenlein considers hypernephroma as belonging to the most malignant tumors, marked especially by local recurrences. He reports a case with local recurrence eleven years after operation. Albrecht writes that of 16 operated patients, 9 died of local recurrence. Metastases usually take place through the veins, but also by the lymphatics. Henke saw several times malignant hypernephroma grow into the right heart (the metastases per the inferior vena cava). Kozubowrski reports a case of complete obliteration of the vena cava inferior with an established compensatory circulation during life; the patient died one year after operation. It is worth remembering that embryonal suprarenal gland tissue is disposed at times in other organs than the kidneys. Pick describes a primary hypernephroma of the ovary; Marchand, of the ligamentum

latum; Shmorl and Blendorfer, of the liver; Donati observed also a primary malignant hypernephroma of the liver.

Grasheimtz writes that there exists a type of benign hypernephroma and reports a patient, 89 years of age, always in good health, who died from another cause, the postmortem examination revealing a hypernephroma the size of a fist. He also states that hypernephroma may be quiescent for years; then become malignant. With a good functionating second kidney the mortality of nephrectomy in the hands of competent surgeons will be less than 10 per cent.

The determination of the presence of the second kidney in patients with a normal urethra, bladder and ureteral implantation is readily accomplished by cystoscopy. The function of the second kidney is not determined with the same ease. One may gain useful but not positive knowledge of true kidney function by ureteral catheterization and the use of the method of Casper and Richter, Kapsammer, Voelcker and Joseph, and Olberran. They should always be carried out, whenever possible, but in making our final deductions we must recollect that Rovsing, Israel, Kapsammer, Alberran, Wiebrecht, Kolischer and Schmidt, and more recently Beer, of New York, have reported cases as evidence that the toxin of the diseased kidney may reduce the function of the sound kidney to a minimum, thereby misleading us, with the results obtained with our present functional tests. This reduced kidney function is permanent as long as the diseased kidney is present in the body, but improves decidedly after the removal of the diseased kidney. In the class of cases demanding an immediate nephrectomy complicated by vesical diseases, such as diverticulum, chronic cystitis, tumors, preventing the use of the cystoscope and the cited tests, we possess other methods which should be used only as a last resort. In these desperate cases they are not only justified, but are of great value.

Fenger and Van Hook advise immediately prior to nephrectomizing of the diseased kidney to make a lumbar incision over the sound kidney and digital palpation of same.

Carl Beck, at a meeting of the North Chicago Medical Society, held two years ago, reported a method which is: incision, bring the diseased kidney into the wound and keep it there, incise the organ, dress the wound; put the patient to bed. The urine of the operated kidney escapes into the dressings; that of the other kidney into the bladder. Two or three days later return or remove the diseased kidney, if the kidney function of the sound kidney warrants the nephrectomy.

Casper lately reports a case of left nephrectomy, and ascertained the presence and function of the right kidney by the following method: He delivered the diseased kidney into the wound, clamped its ureter, irrigated the bladder until the irrigating fluid returned clear, left the catheter in the bladder, then injected subcutaneously indigo-carmine and eight minutes later he noticed blue urine escaping from the catheter.

I have not mentioned urethral obstruction as a contraindication to cystoscopy, as it may be overcome by dilatation or incision. If, unfortunately, an acute urethritis should exist, I believe that cystoscopy is

justified if the infection is not too severe and the condition of the patient too critical. For the information to be gained by it is very important to help preserve the life of the patient. But we must also not forget to consider the seriousness of an epididymitis, cystitis, or a systemic infection that a cystoscopy may provoke.

The oblique lumbar incision beginning from the interspace between the tenth and eleventh ribs, carried downward and inward toward the middle of Poupart's ligament, possesses decided advantages. The muscles should be divided parallel with their fibers and not cut. The length of this incision will vary with the size of the renal tumor to be removed. The largest growth will require the cutting of only the internal oblique muscle. By displacing the peritoneum forward and inward one may reach the renal vessels and clamp them with a minimum amount of renal manipulation, thus preventing infectious material or malignant cells from entering the renal vein, as well as preventing a possible serious hemorrhage, for a suppurative kidney or a kidney invaded by a malignant tumor is very friable and easily torn from its vessel. The particular point which I wish to bring out is that with this incision as recommended by Kocher and in selected cases, such as non-infected cystic kidney, hypernephroma, other renal tumors and subparietal injury of the kidney demanding an immediate nephrectomy, and in whom cystoscopy is contraindicated or impossible to be carried out, the peritoneal cavity, if necessary, may be opened by dividing the peritoneum in the lower half of this incision; introduce the hand into the abdominal cavity and ascertain by palpation the presence, size and shape of the other kidney. It is true we can not determine the kidney function with the tip of the finger, but if the kidney is anatomically normal its function will be correspondingly approaching the normal.

The objection to opening the peritoneal cavity for fear of infecting it should always be taken into consideration. There is always the possibility of this accident occurring. However, in the majority of instances and in selected cases, as previously cited, the infection will not take place. Edebohls, Ferguson and others have, while performing a nephrorrhaphy, opened the peritoneal cavity through the same incision, palpated the gall-bladder region, and removed the appendix successfully. The writer himself has performed through this incision twelve nephrorrhaphies, with the removal of the appendix, without infection. Case 13, a patient in bad health and specific, infection of the wound occurred; however, no peritonitis.

The methods of incising over the sound kidney possess the disadvantages of requiring an additional incision, which must be of considerable size in fatty subjects. A longer anesthesia and a changing of the position of the patient, all these factors also militate against the percentage of recovery, for they increase shock and invite infection in both wounds.

PATHOLOGICAL REPORT. M. HERZOG, M.D., CHICAGO.

HYPERNEPHROMA.

The tumor, which is spherical in outlines, but somewhat flattened, anteroposteriorly, is of the size of an average apple; its longest diameter identical with the long diameter of the kidney is 3½ inches. The neoplasm is situated at the upper pole of the kidney; its external surface is

Hypernephroma, Actual Size.

somewhat uneven and nodular. On the cut surface the tumor looks mottled; it is subdivided by fibrous bands into compartments varying from the size of a hazlenut to that of a walnut. The tumor tissue contained in these spaces bounded by fibrous septa is mottled in appearance, decidedly yellowish spots alternate with dark hemorrhagic areas. The neoplasm in its growth has evidently not destroyed and replaced the

renal tissue, but has compressed it and pushed it aside. The lower half of the kidney is well preserved, while what is left of the upper portion is a mere cap, which sits laterally on the tumor. The latter, as to its situation, appearance and relation to the kidney, has all of the characteristics of a hypernephroma, developed from an embryonic inclusion of adrenal in renal tissue.

With the tumor and the kidney had been removed a considerable mass of perirenal fat.

Microscopic Examination: Sections show that the tumor cells proper are large epithelia with round or oval vesicular nuclei. The cell body is generally vacuolated and in many places the protoplasm of the tumor

Hypernephroma, Section × 100.

cells has entirely disappeared in consequence of fatty degeneration. The nuclei then appear to lie in a large vacuole. The cells are arranged around capillaries and small veins. They form, as it were, a mantle around the small blood vessels. However, the arrangement of the tumor cells is not, as is generally the case in hypernephroma, a close imitation of the zona fasciculata of the suprarenal cortex. In the tumor under discussion the cells are more irregularly grouped in round masses which look more like the zona reticularis than the zona fasciculata of the suprarenal.

From the small thin-walled tumor vessels there has been a good deal of hemorrhage and free blood and the remnants of degenerating hemo-

globin are found throughout the tumor tissue. Many of the tumor cells are necrobiotic and whole tracts are in a state of coagulation necrosis. These degenerative processes have led to a good deal of inflammatory reaction in the tumor tissue proper and around it in the fibrous septa and capsule.

The renal tissue in the lower portion of the kidney is mostly in a fairly normal condition. The compressed upper part shows pressure atrophy of tubules and glomeruli, chronic interstitial changes and more acute inflammatory infiltration.

From a surgical standpoint the gross pathologic characteristics of a hypernephroma are of value to the surgeon, and with them we may with

Hypernephroma, Section × 100.

a fair degree of accuracy make the diagnosis of a hypernephroma. Grashewitz recapitulates the characteristic anatomical points of hypernephroma: (1) Subcapsular situation. (2) Peculiar yellow color, due to fat. (3) Hemorrhagic areas give the tumor a distinct color appearance. (4) Knotty or bulbous shape. (5) Iodized starch solution is decolorized by the extract of the tumor (Croftan). (6) If the hypernephroma develops from adrenal gland tissue, deposed in the kidney, according to the theory of Grawitz, we should be able to find adrenalin in the extract of the tumor.

In the anatomical differential diagnosis the consideration of carcinoma, sarcoma and particularly the adenosarcomata as described by

Birch-Hirschfeld must be taken into consideration. The latter growth occurs in contrast to hypernephroma in early childhood, nearly always bilateral, form early metastases, and are always fatal. The majority of surgeons are of the opinion that a hypernephroma should be treated with as much radicalism as the most malignant tumors.

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FEBRUARY, 1909.

WOMEN IN MEDICINE.

Some time since our attention was called to the statement that the number of women undertaking the study and practice of medicine was rapidly decreasing, and to secure facts upon this important subject we have communicated with the officers of every medical college in the country and have secured answers to the following questions from a large proportion of these colleges:

1. Did your school ever admit women as students?
2. If so, when did you withdraw the privilege, and why?
3. If you still admit them, do as many apply for admission now as formerly? How many are registered in your school this year?
4. If there is a falling off in the number of applicants, to what do you attribute the diminution?
5. Have women, in your experience, as a general rule, succeeded in study and practice as well as men?
6. Any further information on the subject will be appreciated.

In the first place, it appears that a large proportion of the medical colleges devoted exclusively to the medical education of women have become extinct. The number in this class is 10; the most remarkable examples have been the Northwestern University Woman's Medical Col-

lege, Chicago, which, after a long career, was closed in 1902; the St. Louis Woman's Medical College and Hospital, closed in 1896; the Woman's Medical College of the New York Infirmary, New York City, closed in 1877; and the Woman's Medical College of Cincinnati, merged into the Laura Memorial Woman's Medical College of Cincinnati, which institution closed in 1903. Three out of the 10 colleges merged into other colleges and 3 are still in existence, but with classes considerably reduced in size. The largest of these is the Woman's Medical College of Pennsylvania at Philadelphia, which had 138 students in 1907-8 and 32 graduates. The others are the Woman's Medical College of Baltimore, Md., which had 28 students and 11 graduates in 1907-8; and the New York Medical College and Hospital for Women (Homeopathic), New York City, which had 20 students and 3 graduates in 1907-8—making a total in the three schools of 186 students in 1907-8 with 46 graduates at the close of the last reported session.

Of the 112 colleges not exclusively for women, 36 did not admit women to the study of medicine and 74 do admit women to the courses on the same terms as men, and the total number of women students in these co-educational schools is placed at 504 for 1907-8. This, together with the 231 women attending the women's colleges, makes a total of women students of medicine in America 735 or about 3.7 per cent. of the total number of medical students, compared with 3.8 for the previous year. Of the 74 colleges admitting women students in medicine, 18 show an increase in the number of women students and 56 show a decrease. There were 185 graduates this year as compared with 211 the previous year and 233 the year before that. The total number of women students has decreased from 1,244 in 1904 to 735 in 1908, and the graduates from 198 in 1904 to 139 in 1908.

From these statistics it will be seen that the statement is true that the number of women medical students and graduates at medical colleges is undergoing a notable decrease, and under these circumstances the remarks of some of the officers of medical colleges become of great interest. Almost without exception the officers testify to the *good qualities of women as medical students and their non-success as practitioners.* One officer remarks as follows: "Women succeed in study better than men to this extent: they answer questions better and achieve better scholarship records than men, but the apparent superiority of women disappears on commencement day." Another says: "Women excel in courses where memorizing is important and in the acquisition of laboratory technic, while as a rule they are not so strong on the logical side. As to their success in practice—the prejudice in most communities is pretty strong. For over forty years women have had a fair opportunity to study medicine in good schools, and although several thousand have graduated and gone into practice, yet the number who have attained any distinction is extremely small. This is largely to be accounted for, however, by the fact that women in medicine is a case of the 'survival of the unfittest' all along the line." Another says: "If there is a falling off in attendance of women it is probably due to the fact that there are so

many vocations open to women now which were formerly closed. As far as scholarship is concerned, women rank as high as men, it seems, and often lead their classes. In practice they probably succeed in about the same way men do—that is, there are some who have made very successful practitioners." Another says: "The decrease in the attendance of women is due to the rigid requirements." Another says: "Women do some medical work well, but eternal laws limit their function and leave the more serious medical work in the hands of men." Another: "As a general rule women have been excellent students of medicine, acquire facts readily and retain them well; but in general practice they have not appeared to be as successful as men. Of course there are brilliant exceptions to this general rule." Another: "As students women are equal to men; in practice they have measured up well with the men." Another: "There seems to be a general decrease in all medical students. Women in study and in practice have succeeded as well as men." Another: "We are registering as many women proportionately as in former years. Women succeed as well as men in study and practice." Another: "I can not account for the falling off in the attendance other than that women eventually are having more difficulty in succeeding in the practice of medicine than, possibly, twenty years ago. They do not seem to be able to get a large proportion of cases of women and children to which they might be justly entitled. This is particularly true in cities. In the country places it is more a question of physical hardship. It has seemed that three out of four women who have studied medicine with us should not have taken up the subject for various reasons. The fourth, who was fitted for the study, was unusually successful and stood well above the average of the class and subsequently made a very successful physician." Another: "They succeed in study and practice as well as men." Another: "Have had 7 women students since 1896; 3 graduates, 2 dropped out after the second year and 2 remain. Two of the 7 (1 of them notably) were fine students. Of the other 5, 2 were bad and dropped out and the other 3 were only average. Two graduates are practicing successfully and the other one, after a few years, went into some other business." Another: "Women do equally as well as men in study, but physically are sometimes unable to succeed in practice as well as men." Another: "We admitted women for forty years. Main reason they ceased to be students here was because of the sentiment which developed against them in the school." Another: "More women apply for admission than formerly. They have succeeded as well as men." Another: "Those women whom I have met professionally seemed in the main to be intelligent and skilled along those lines which women would naturally follow in the way of medical specialties." Another: "I do not think that, as a rule, women graduates have succeeded in practice as well as men, although our experience has been that they have stood well in their classes, sometimes winning the honors from the men." Another: "They are (as far as we have observed) succeeding quite as well as male practitioners." Another "Women do not have the courage or strength to endure the hardships

incident to a successful physician's life. I have never known a woman to make what I call a success in the practice of medicine. I fear that the great majority of them are abortionists, which gives them their greatest source of revenue." Another: "Two graduated and made fine grades. See no reason why women should not succeed in practice as well as men if equally talented and have good advantages, especially in certain diseases." Another: "The diminution is because the course is becoming too heavy. Our requirements are now much higher and the course is lengthened and embraces more subjects. Women do not seem to be able to stand up to the work." Another: "In some branches they are doubtless as good as men, but in general I think not." Another: "Women seem to succeed as well as men. There seems to be very little inclination on the part of women to take up the strain of a medical practitioner, although there are two or three quite successful female physicians in this city." Another: "Since this school opened in 1902 we have had but one woman student and she did not finish but married later." Another: "They do fully as well as men in carrying out definitely prescribed work, but are much less apt to show initiative. This seems to be the case with women practitioners. There is without doubt a field justly open to women physicians, but for most of them this field would be largely in those lines of medical practice where well formulated methods of procedure are most definitely outlined, and especially where careful nursing enters into the problem." Another: "They have succeeded in study as well as men, but not in practice." Another: "They have succeeded in study and in practice as well as men." Another: "From the beginning of this school in 1877 the proportion of women students gradually increased until they numbered about 20 per cent. of the total. This proportion has diminished until we now have none in the last three classes and but one senior. A number of causes have conspired to this end, namely: 1, absence of opposition, which was no doubt an attraction at one time; 2, no longer a novelty; 3, increased entrance requirements and course of study; 4, increased cost and time of study; 5, increased amount of laboratory work; 6, think probably women find greater difficulty than formerly in practice. With few exceptions, my experience has shown that women have made excellent students—theoretically, among the best. Their examination papers were, on average, better than those of the men. They have made the best students, but do not succeed so well practically." Another: "As to the success of women, they have succeeded as well as men in study but not in practice, although many of our female graduates are among the best practitioners in the city and state (California). The decrease in attendance of women is attributable to the more difficult curriculum." Another: "Higher standard for matriculants is the cause of the decrease in applicants." Another: "The privilege of admission of women was withdrawn in 1902; principal reasons were the low or ordinary grade of women that applied, and they seldom practiced legitimate medicine, did not grace the profession, and were more or less troublesome during their attendance in mixing up in vari-

ous ways with male students. They have not, I think, succeeded as well as men in the practice of medicine, only here and there an exception." Another: "Various reasons are given for the falling off in attendance of women: increase in entrance requirements; the fact that the profession of nursing has been greatly developed in the last ten years and its standing elevated, and it is said women who would formerly have studied medicine now take up the profession of nursing; so many more avenues are now open to women than formerly. As to their success, women do good work in text-book and recitation course and in the laboratory courses where definite tasks are set, but as a rule they are not as original as the better type of male students. However, there are exceptions to this rule, of course. Our women graduates have succeeded well in practice and in scientific work, quite a number doing very creditable work in the laboratories here and elsewhere, others very successful practitioners, both in internal medicine and in gynecology and surgery." Another: "No students are accepted except those who expect to devote their lives to work as missionary physicians. This year out of a total of 60 in the graded course there are 22 women. There is a wide field of usefulness for women as missionary physicians, and we have no reason to think they do not succeed in their particular line as well as men." Another: "Diminution in number of applicants throughout the country is probably due to the fact that women in general do not look to a woman physician or surgeon when there is anything seriously wrong. Woman as a student is up to or above the average man but far below as a practitioner."

CHANGE IN THE METHOD OF ADMINISTERING STATE INSTITUTIONS.

The present method of administering the state institutions by local boards, the members of which are appointed for political activity and receive no compensation for their work, is, as we have had occasion to frequently remark, inadequate and inefficient. Two members of one of the largest institutions of Illinois have been absent from the state for several years and have, of course, been out of touch with the management and needs of the institution. These men having nothing at stake can not be severely criticised for their lack of attention to duty, and, on the other hand, the institution has probably been conducted as efficiently without their presence as it would be if they were to visit it once every ninety days, as was their custom.

One of the bills introduced into the senate provides that there shall be a central board composed of three members who shall give their entire time to the management of these institutions and be given salaries adequate to the responsibility involved. This plan of managing the state institutions appeals to us as an excellent one, and we hope our readers will lend their indorsement to securing a passage of the bill providing for the appointment of such a board. It will, of course, be

fought by local interests who see in the institutions simply means of getting appropriations to be expended in building up their respective communities.

One of the state officers said many years ago, "That the state could well afford to burn down all of the existing institutions, sell the grounds upon which they stood and collect all in one community where the entire sum necessary to care for the unfortunates could be expended in a business-like way."

Several of the younger states are taking this view of locating the charitable institutions, and while it will probably never be possible to carry out such a plan in Illinois, yet the next best thing of having a central board of management should be, and we believe will be, finally adopted. In the meantime full credit should be given to the present State Board of Charities for the successful efforts they have made to better conditions, notwithstanding the abuse that has been heaped upon them by certain cheap politicians from time to time.

CHRISTIAN SCIENCE CALLED A FRAUD.

The Rev. Johnson Myers, Chicago, recently denounced Christian Science as one of the greatest menaces of modern times, stating it was a fabric of lies and fraud built upon a foundation of error. He declared from his own personal knowledge this delusion was responsible for scores of deaths. He himself has charge of at least one funeral a month which is directly chargeable to Christian Science. Some of the other things that Rev. Johnson stated are as follows:

"I remember that the first woman who left this church to become a member of the Christian Science organization died within two weeks. She went bravely, however, glorying in her agony. She declared to the last that there was nothing the matter, that she was quite happy and that she felt no pain.

"Why, there is a 'healer' who lives but a short distance from my own house, a few blocks from this church, who had been claiming to heal others, but finally got down seriously ill herself. Her father was summoned and found her in great agony. 'Now, if you wish to you may lie there in your pain all night,' he suggested. 'But if you want a physician I will summon one as soon as you say the word.' The word was said, the woman was taken to a hospital and an operation was performed for appendicitis according to the physicians' material plans.

"There isn't a hospital in this city which does not hold Christian Science members who are being treated with medicines and by physicians."

A NEW UNIVERSITY IN CHICAGO.

The latest "University" to be opened in Chicago is "The Illinois Kiro-Practic University Adjusting Parlors," which has been advertised prominently in the Chicago papers as located at No. 39 State street.

The only claim made for this practice is that it cures affections of the eyes, throat, lungs, nose, heart, stomach, liver, spleen, bowels, kidneys, bladder and reproductive organs—all done without the use of drugs or knife. The school is to be opened February 1, 1909. Pressure is taken off of the nerves that are being interfered with and this leads us to believe that Kiro-Practic is another form of osteopathy.

LAKE COUNTY TUBERCULOSIS INSTITUTE.

The progressive physicians and citizens of Lake County have voluntarily gone to work to combat the great white plague by a voluntary organization known as the Lake County Tuberculosis Institute. The total number treated in 1908 was twenty-seven, and the committee is making an appeal for $10,000 to enlarge grounds and put up permanent buildings. The charges for private cases are $40 per month, which covers everything. Besides treating the sick, a pamphlet giving valuable information is distributed to the community, and undoubtedly such organizations in every county would be a great factor in stamping out the disease.

CIVIL SERVICE EXAMINATION.

The Illinois Civil Service Commission will hold examinations for various branches of State service and have requested us to make special mention of the examination to be held on May 6, 1909, when examinations will be held for positions in the hospitals for the insane and for the Eye and Ear Infirmary of Chicago. At least twenty (20) places are open for physicians and surgeons at this time. Further details will be found in the April issue of THE JOURNAL.

IMPROVED VITAL STATISTICS BILL.

Efforts will be made by the various organizations to secure for Illinois a vital statistics bill, up to date in every particular, and we believe there is a fair prospect of success in this session of the legislature. We hope our members will all work together and give the State of Illinois such a law as will place our state in line with other progressive commonwealths of the Union where she belongs. We shall have further observations and suggestions on this matter in the next issue of THE JOURNAL.

THE FEE SPLITTING.

Again this month we present several communications on the fee-splitting proposition and have received assurances from many readers of the considerable interest that has been aroused on this question. We shall limit our editorial utterances this time to the following axioms,

which seem to us self-evident, and a statement of some of the abuses which have been brought to our attention as follows:

AXIOMS.

1. The specialist should consider the patient's ability to pay when making his charges.

2. The family physician should make an exact and truthful statement of the patient's financial standing.

3. The specialist should make a reasonable charge and in no event charge so much that nothing is left with which to pay the family physician an adequate fee.

4. The attending physician in selecting a consultant should choose the one most skilled in treating the particular disease with which his patient is afflicted. In no case should his judgment in this matter be influenced by the money question.

5. The attending physician should not send a patient able to pay a fee to a free clinic or hospital for operation where the patient will receive the charitable services of a physician or surgeon.

SOME OF THE ABUSES THAT HAVE BEEN BROUGHT TO OUR ATTENTION.

1. A surgeon makes an arrangement with a general practitioner in the country to get together as many operative cases as possible. On a signal the surgeon comes to the small town or city, operates on the case or cases, relying necessarily on the diagnosis of the general practitioner. As much money as possible is collected from the patient, his relatives or friends, and the surgeon, after making a certain division with the general practitioner, returns to his city home and, fortunately or unfortunately, never sees his patients again. Instances have been reported where the surgeon has made only one such excursion to a given community.

2. A surgeon under similar circumstances makes such an excursion, makes the uniform charge of $100 for each case operated on. The general practitioner makes and collects such a fee as he sees fit and retains all over $100. A practitioner has been known to collect $400 or $500 for an operation, for which the operator received only $100.

3. A patient of very limited means is sent to a city hospital where an operative procedure on the head is undertaken for epilepsy. No contract as to the charge was made before the operation. This operation consisted merely in making an incision through the tissues down to the skull. The incision revealed no indication for further operation and the wound was closed. A charge which entirely exhausted the financial resources of the patient was made and paid, although the surgeon was entreated by the friends of the patient to make a smaller charge. This overcharge seriously embarrassed the patient for years. Ten years later the cause of the epilepsy was found elsewhere and an operation performed by another surgeon which resulted in a cure. His compensation for a successful operation was one-fourth that of the fake operation.

4. The general practitioner telephones the surgeon that he has a case for operation ready for the train, wishes the operation performed as

soon as it reaches the hospital so that he (the practitioner) can take the first train home. Under these circumstances rush operations are performed, often to the detriment of all parties concerned.

PREVENTION OF OPHTHALMIA NEONATORUM.*

Dr. Wilder, Dr. McNally and Mr. Babb were made a committee to prepare specific recommendations on the prevention of ophthalmia neonatorum. Their report follows:

"It is well known that ophthalmia neonatorum is the cause of a large proportion of blindness in this as well as other countries, and that in the special schools for the blind as many as 25 per cent. to 35 per cent. are there because of this disease. It is also a well established fact that by proper and comparatively simple means it may be prevented in a vast majority of cases.

"The state should enact a law having for its object the adoption of measures for the prevention of this disease at least in the practice of midwives and in public institutions where obstetric cases are treated.

"The State Board of Health seems to be the proper authority for establishing the necessary rules, regulations and ordinances and enforcing their observance, and for publishing and distributing appropriate information on the subject.

"It is probably best that the specific method to be used for the prevention of ophthalmia neonatorum should not be stated in any law, but should be left to the intelligence and judgment of the State Board of Health, believing that it will act in accordance with the most advanced existing knowledge. The following form of law is suggested in accordance with the ideas suggested above:

"An act to prevent inflammation of the eyes of the new-born babe, or so-called ophthalmia neonatorum:

"Section 1. The Board of Health of the State of Illinois is hereby vested with power and authority to publish and distribute such information and instruction, to furnish such remedies and to make such rules, regulations and ordinances as it may deem expedient to prevent the development of inflammation of the eyes of the new-born babe, so-called ophthalmia neonatorum, in public hospitals or institutions in which midwifery is practiced either wholly or in part, and in connection with the practice of midwives.

"Section 2. Said Board of Health is authorized to enforce its rules, regulations and ordinances on this subject at the expense of the state.

"Section 3. Any person violating any rule, regulation or ordinance of said Board of Health regarding the prevention of ophthalmia neonatorum shall be guilty of misdemeanor, and shall be punishable by a fine not to exceed $100 or imprisonment not to exceed six months, or both.

"The above suggestions are in substance embodied in the report of the Committee of the American Academy of Ophthalmology and Oto-Laryngology cooperating with the Committee of the American Medical Association on legislative measures to prevent ophthalmia neonatorum, presented to the House of Delegates of the American Medical Association, June, 1908.

"The central feature of giving the State Board of Health direction of the whole matter and power to act is, in our judgment, a good one. A law similar in purposes to the one proposed would be more effective than the new one on the statute (Chap. 38, Section 510, Revised Statutes of Illinois) relating to the same subject, which by the new enactment could be repealed.

"According to the present law, which, so far as I am aware, is not enforced, the nurse or midwife who notices a discharge from the eyes of an infant within two weeks after its birth must report the same to a health officer of the town or some legally qualified practitioner within six hours of the discovery, under a penalty for failure to do so. The proposed new law contemplates that the mid-

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* Extract from the Report of the Illinois Commission to Inquire into the Condition of the Blind.

wife shall be *instructed* by the State Board of Health in the *method* of *prophylaxis*, which *she will be compelled to use in every case*, and, *in addition*, that she will *report* any *cases* of the *disease* that *may arise* in *her practice* to the *proper* authorities.

"WM. H. WILDER,
"J. T. MCANALLY,
"C. E. BABB."

Correspondence.

THE DIVISION OF FEES.

JACKSONVILLE, ILL., Dec. 14, 1908.

Editor Illinois Medical Journal.

Dear Doctor:—I was much interested in the letter of my friend "Lege" on the subject of clandestine division of fees. He is right, but I do not see why he should have used my name in that connection. It may have been his busy day and he read no further than the fish story in my article published in the November JOURNAL. More likely fee division is a bogy with the doctor, created by his own personal experience with venal physicians. After reading his admirably candid letter in the December JOURNAL I do not wonder that he withheld his name, lest the practitioners with whom he has had to deal come and rob him of the little that he admits he has left. It is worse than I thought, but no one can doubt the honesty of the doctor's letter.

If all the surgeons were like "Lege" my article need never have been written. On the other hand, I also have as clear a record. No man ever understood me as asking, receiving or hinting at a clandestine division of fees, and, in turn, no man in Jacksonville ever offered me such division. I did not need to say this in my own society. I have received commendatory letters regarding my article from physicians in all parts of the state, but in none of them was the subject of fee division mentioned. It took the surgeons to read that into it. A note from a former president of the American Gynecological Society said: "Your points are, in the main, well taken."

All of us know that the offer of fee division in its worst form came originally from the surgeon to the physician, not the reverse, and in many cities does yet. It is a Frankenstein created by the surgeons themselves, which they are no longer able to control. It was offered by a certain class of surgeons as a bait with plausible arguments for its acceptance and in turn is now demanded by the same class of physicians as a right.

The two extremes, as presented by "Lege" and myself, are: First, The specialist is asked to rob the patient of more than he thinks his work is worth in order that he may have sufficient left after being himself robbed by the physician who advised the work. Second, the specialist ignores all the time, skill and responsibility invested by the physician, which may be as great as or greater than that of the operator, and from his coign of vantage, having no further use for the family, mercilessly charges as much for his work as if there were no division of labor

or responsibility, leaving no margin for the physician who has spent ten hours to the surgeon's one on the case. If the profession can find no mean between these extremes then woe to the profession.

An operation is often an incident in a long spell of sickness in a family where doctor's bills must be reduced. Why should there not be an honest division of fees in such a case? Why should the physician do all the reducing? Why is it rank heresy to inquire the amount of the surgeon's fee in trying to fix one's own? Why must this whole subject be discussed in whispers, like the subject of where the baby comes from?

Very truly yours, DAVID W. REID.

IN THE MATTER OF SPLITTING FEES BETWEEN SURGEON AND GENERAL PRACTITIONER.

It was as certain as anything in this world that the practice of splitting fees as pertaining to surgical operations should at some time meet with the serious attention of the medical profession. The question in the main is, "Upon what meat doth the medical profession feed that should differentiate them from the sea of grafters that surround the profession on all sides?"

It cannot be denied that the whole country is permeated with graft and we feel disposed to be angered because, forsooth, some medical men fall under that malign influence. The medical profession is recruited from the great body of the people, and it is certainly ungenerous, to use no stronger epithet, to expect them to be radically different from those from whom they sprang.

There is one law of natural philosophy which is inexorable, and that is, that water will not rise above its source. Under these conditions is it not sublimely innocent or superlatively stupid to discuss the morality or the ethics of the medical profession, and to endeavor to determine their viewpoint in regard to the practice of a division of the fee paid by the patient for an operation between the operator and the general practitioner? The very fact that such a condition should exist and should require ventilation is certainly a confession to a state of moral turpitude which is appalling, as it presupposes a general state of moral turpitude existing throughout the whole body of society as organized in the United States. Take a sweeping and wide view of all that goes to make up our political and social organism and make a fair analysis of the same, and we will at once see that there may be some injustice done in the wholesale denunciation of those medical men who may indulge in a small way in the great game of graft.

Look at our Senators, our Legislators, our great daily newspapers (the pabulum upon which our minds are fed daily).

Our Senators bribing and cajoling their way into the senatorial chamber. Our legislators ready ever to hold up anybody or anything that may come along, from a young lady government clerk to a $1,000,000 corporation. Look at our politicians, political canters and ranters, ignorant, uncultured and untutored, vulgar and loud mouthed, inherently

dishonest. Look at the Mayors of our large cities, our City Councilors, our State Legislators, our multi-millionaires, our express and telegraph and railroad holdup companies, look at some of our labor leaders, our trusts and our monopolies (these last alone graft the people for $1,750,000,000 a year). Was there ever in modern history such a hell broth of scoundrels bunched together?

The pity of it all is that we are all in the same boat, engaged eternally in picking one another's pockets. Some of us travel as saloon or first-class passengers, others of us travel second class, others again third, others in the steerage, others again are stokers in the hold, but we all go to make up the pirate crew.

Take a look at the number of feticides committed each year in the United States; their sum total is appalling. Who are the perpetrators of this heinous crime? The unborn cry to God for vengeance, for their's has been a cruel, bloody, cowardly extinction. The helpless unborn destroyed for $15 and up per head. Then what about the records of our divorce courts? Take all into a sweeping perspective, does it not look pettifogging and picayune for the medical profession to go into hysterics because some medical men have become morally insensible and make it a practice to divide fees?

Of course the general practitioner holds up the surgeon. "Pass over so much," says he, "or I will throw the case over to somebody else." The surgeon stands between the devil and the deep sea, he "cusses" his fate, but hands over nevertheless. Then, again, the surgeon often throws out the inducement of the partitions of fees to tout for business. It is all in the great game of graft. We are all sovereigns in our own right and must perforce defend ourselves against all comers. To do this successfully we must have money; thus to get money has become the cardinal feature of American life to-day.

Without money we are nothing. Money has become the Alpha and the Omega of our existence. Get money—honestly, if you can, but you must get it; if it becomes necessary to counterfeit conversion to get money, by all means counterfeit conversion—the hypocrisy will be forgiven, but the want of the dollar never. Everywhere the dollar is worshipped and glorified. Everything is subordinated to the acquisition of the dollar. Loyalty, character, honesty, morality, religion, erudition, sensibility, imagination—in fact, every attribute that tends toward the uplifting of mankind. The man with the barrel of dollars is the man that is looked up to and honored irrespective as to the means taken to acquire that barrel.

Did we not as a government, through the immense preponderance of our power, hold up little insignificant Colombia and benevolently assimilate the Panama strip? From top to bottom, from core to rind, the corruption of graft has been slowly rotting our whole natural existence. Are the medical men to become the saviors of the country? Is this the little lump of leaven destined to leaven the whole mass of corruption? A most formidable task. We are to set the example. We are to blaze

the way. We are to be the pathfinders for the regeneration and the uplift of the whole nation. What sublime ambition! How shall we begin? What about those murdered unborn? Shall we stop slaying them by the hundreds annually? Regenerate ourselves? Stop aborting women and dividing fees with surgeons? What sublime simplicity! Our masters, the grafting public, uphold and patronize the abortionist; why, he is a good fellow, so they give him applause, patronage, money and a competency. They see no act of venality in the general practitioner holding up the surgeon on the one hand and the general public on the other hand.

The public have been educated to be held up, and the insignificant occasional holdup of the general practitioner and surgeon is altogether beneath notice. The public viewpoint is a purely commercial one. If the surgeon who operates allows himself to be held up on the one hand and the patient operated on permits himself to be held up on the other hand, whose concern is it anyway? People, they argue, should not be so unfortunate as to necessitate an operation upon themselves, and if such necessity should arise they are the ones to see to it that there is no holdup game between the surgeon and the family doctor. It is a matter that strictly lies with themselves. That the medical profession should step in under the disguise and pretense of ethics to stop the little game of graft and the double crossing of fees. Pshaw! What presumption! What colossal stupidity even to make the pretense of stopping grafting among a body of men when every inducement is held out and every encouragement given them by the general public to graft and grow fat! Why should medical men be considered as differing from anybody else? Is not the whole country engulfed in a sea of graft? Is there anybody bold or foolish enough to deny this very plain, patent and palpable fact? Nobody wants to hold a brief for morally insensible medical men, but our endeavor should be to be eminently fair-minded nevertheless.

Why condemn the product and leave the great causes untouched? It is sublime simplicity to expect an honest homogeneous product from a heterogenous mass of rottenness and corruption. How is this pure spotless product that we expect to find the medical profession to be to be generated? By the teaching of medical science and art? What stupidity! Have we not seen the sad spectacle of the impotence of a most strenuous President endeavoring to drive back and keep under the ever widening circle of graft by the vigorous wielding of the big stick? As well try stem the torrents of the Niagara with a broom straw. A protest should always be made when wrong is done, even when such a wrong is upheld by a perverted public opinion. But we should not forget that we medical men reflect the habits, the thoughts, the character, etc., of the age and the people among whom we live. We should try to be fair. Is it not a terrible indictment of the medical profession and the American people generally that such a condition should exist? Do these conditions exist among the medical men of other countries? Take, for instance, Germany, France, Italy, England. The practice of dividing fees if proposed to the medical profession of those countries would elicit expressions of amazement and horror. Perhaps these countries mentioned

have not advanced to that high state of civilization that we have here. They may be possibly benighted and unprogressive. They have not, in point of fact, been sufficiently educated and far enough advanced along the road of civilization to understand and grasp the "finesse" of the game of graft. May it be that the members of the medical profession of these respective countries are like camels, unable to see the humps on their own backs?

Probably our understanding of the words "meum" and "tuum" is gradually and irresistibly undergoing a metamorphosis. Possibly we are getting to understand the proper relationship of man to man. Dog eat dog is to become the motto of the twentieth century.

Possibly it may prove to be, in the general acceptance of a new moral code by the world, unjust to arbitrarily judge and condemn medical men for dividing fees and for ruthlessly destroying the unborn. If all these hideous presumptions are true it is as certain as anything in this world that salvation is close at hand. It will not be a salvation from the Lord, however, but it will be, as it were, a salvation from the Devil. Always and eternally yours, JUSTICE.

FEE-SPLITTING PROPOSITION.

Jan. 13, 1909.

Editor Illinois Medical Journal—

Dear Sir:—Any man who has been in active practice for the past thirteen years in this state and who has to make his living entirely from his practice has been in contact with the fee-splitting proposition often enough to sit up and take notice whenever this subject arises. The letter in the December issue is particularly interesting to me—so much so that I hope you may have room in your JOURNAL for a little more discussion and will permit it.

I make no pretense to any unusual surgical ability. I had no opportunity for a hospital service and what surgical training I have has been given me by contact with a few pretty good men; by such study as I can give these subjects, by some accommodating dogs—may they rest in peace, which most of them are doing—and by trying to do the little surgery which comes with a general practice in a town of 12,000 people as well as I can. So, as I said before, I am not a surgeon. But I am glad that this letter in the December number of the JOURNAL has been published for two reasons especially.

First, because this man who evidently is a surgeon, who has properly qualified himself for the special practice of surgery has decided to talk, to present his side of the case, to tell his troubles. I don't know who he is. I don't know whether he's sincere or not and I don't care. He has made out a good case for the surgeon and in the interest of fair play it is time that was being done. Maintaining a dignified silence, being above such carping criticism, etc., etc., is all right in its way, but unless that position is taken upon right principles, principles which bear being preached in their own vindication, that same dignity and silence will be

turned against the surgeon as a tacit admission of the truth of his enemies' statements. I can walk by the recumbent dog in the strange front yard with all the dignity of Hippocrates, but unless I am not only able but willing to kick that dog under the chin occasionally and kick him hard he won't respect me any, and he'll do me a lot of damage sometime or another.

Second, "Of every 100 cases referred to him but twelve were surgical." That's a bad proposition for the general practitioner any way you look at it! It means either a woeful lack of diagnostic ability or a woeful abuse of the confidence placed in the medical profession by those who are sick, either physically or mentally. I have made mistakes in diagnosis; I have been invited by each of two good operators to round up the available operative persons in my vicinity and operate them. One proposition is as distasteful to me as the other, and I hate to make mistakes. Consequently I am still studying diagnosis and still using consultants and specialists in what seems to me a legitimate, decent way. But I will not admit that I am wrong in my diagnosis four times out of five. Neither will I admit that it is right to refer a patient to a surgeon for an operation when that patient does not need it, just because my surgical friend can do laparotomy in almost entire safety. Leaving the money question clear out of the discussion, that is not right. I never have done it and I never will. We all have those chances, chances for easy money of that kind. But the man, medical or surgical, who will abuse a patient's confidence for what there is in it is not worthy of anybody's confidence. Sooner or later doctors who do such things distrust each other. Then comes home the old truism, "you can fool some people all the time, all the people some of the time, but you can't fool all the people all the time." Sooner or later a physician or surgeon has to stand square on his feet and accept the sentence which he has earned among his fellows, and if he does not die too young he usually gets about his just dues.

The fee-splitting proposition does not bother me. I have never received a cent from a consultant, surgical or medical. I try to recognize my own limitations. I try to recognize the rights of the patient and I certainly try to recognize the ability of, and the respect due to, the men to whom I go for consultation. I make it plain to the patient that I shall charge for my own services, that my consultant shall charge for his, and that these charges shall be separate business relations with separate men. I frankly state to the consultant what I consider a fair fee for his services for the individual concerned, and I never have had my statement questioned for a moment. Incidentally, I don't choose tricky men for consultants and I won't stand for them if I know them. If I run across them I know what to do next time. I have consulted with and worked with local surgeons and with some of the best men in Chicago. Sometimes these men have been paid, sometimes they have not. But I have always seen to it that they were paid as generously as possible whenever there was anything to pay them, and if one of these men has not been satisfied he has never, directly or indirectly, mentioned the

fact to me. As to my own compensation, it has been settled on the same basis, but not one cent has come from the consultant.

It is all a question of individual honesty anyhow. There are all kinds of men in the medical profession. The general practitioner who, for any reason whatsoever, is willing to take advantage of the faith and trust reposed in him because he is a physician to advise an operation whether it is needed or not and expect a "rakeoff" from the surgeon can always find a surgeon to "hook up with." The unscrupulous surgeon who prepares himself and poses as a consulting surgeon and will give a third or half of the fee received to the man who brings in the case can always find plenty of men to solicit business for him on that basis. Both these classes of men exist and are to be reckoned with. Meantime the suffering public keeps them both going. I am no "prude" and I have had pretty nearly every ethical theory knocked out of me by this time, but I am sure that a man can be decently honest to the public, to his fellow practitioners and to himself and make a good living in this business—and that is about all most of us do anyhow.

Where is the remedy? I don't know. But there is one element in the medical profession which is usually overlooked in these discussions; the element which may be the foundation for needed reforms and that is the good general practitioner. By this I mean the fairly competent general practitioner, whose number is, thanks to better methods of training and experience, steadily increasing. The establishment of local hospitals and the improvement of sanitary and preventive conditions help make this man a better man every year. He must be a good physician; he is usually a pretty competent obstetrician, who can do a high forceps delivery in a private house with only an anesthetist to help him; he will remove an appendix or a breast with the assistance of his local colleagues, and he is getting a little bigger every day. He is going to be bothered less and less by the troubles that others have over their fee relations, because he is doing more and more work himself. And because he is gradually becoming more competent, the proper position of the beginner, the specialist and the grafter in all classes will be more and more clearly defined. With all due respect to the surgeon this hard-working middle class may yet furnish him the most valuable aid of all. To illustrate, I have a friend and patient whose appendix was removed by Dr. Ochsner in Chicago. Two years' later I removed my friend's hired girl's appendix in our local hospital with the assistance of my consultant here. My patient got well just as promptly as her employer did. But that does not in the least make me as good a surgeon as Dr. Ochsner—to me it simply emphasizes the superiority of the surgeon who has a thousand opportunities to my one, for I recognize my own limitations. When I take him a consultation I try to take it intelligently, and I don't want any of his money. If all the consultations came from men who honestly try to do things themselves just so far as they feel reasonably competent and just as honestly take to the consultant the cases for which they are not competent there might be fewer specialists. But they'd be better specialists, there would be fewer grafters of each class, and there would be fewer funerals at the county's expense. C. B.

SPLITTING THE FEE.

To the Editor:—Dr. Fulgham's letter in the November issue of THE JOURNAL should not go unanswered. Therefore, in as brief a time as possible I wish to make a few remarks on the subject. The whole question resolves itself into the fact, Is the "laborer worthy of his hire"? If the physician allowed the surgeon to overcharge his patients then he is at fault. I have not found any surgeon that would not set his charges within the patient's ability to pay. If the surgeon's services are worth what he charges (and who will say they are not) then he is entitled to that amount. When a physician once receives part of the surgeon's fee he is lost, for the very good reason that it is so hard to reform the man or the profession when money is in question. The reference he makes to "other towns' way of doing things" reminds me of the case of a town near his place where the physician referred the patient to the surgeon; the physician collected his and the surgeon's fee and kept both. The physician asking for a part of the surgeon's fee should be in the commission business—he has no place in the profession. The surgeons advising such a thing are the very ones no physician would have operate the second time on a patient of his or himself. They can only get patients through such practice. Had a case of a famous advocate of this practice operate here on a patient of another physician and the way he cut into bowel and tore the mesocolon searching for a sound appendix should damn this commission business forever. DR. J. J. MORONY, Breese, Ill.

APPRECIATION OF AMERICAN ORIGINAL WORK ABROAD.

To the Editor:—During a recent visit to the clinics of some of the chief cities of England, Scotland, Denmark, Germany and Austria, Dr. Otto Freer of Chicago made numerous demonstrations of his submucous resection of deflections of the nasal septum and was received by the colleagues in his specialty with an intensity of interest in his work which should be most gratifying to Americans. Up to this time American rhinologists have listened to the teachings of distinguished colleagues invited to the United States from abroad to show their methods, but Dr. Freer's experience shows that physicians in foreign countries are quite as willing to give respectful attention to what Americans have to show them provided it be, as Dr. Freer's case, the result of genuine and painstaking original research in clinical or other lines.

Dr. Freer's publications in foreign journals have made him even better known in other countries than in his own, and his method and instrumentarium are winning their way in Europe. A recent editorial in the *Journal of Laryngology, Rhinology and Otology,* published in London, considers Dr. Freer's views at length and is an evidence of the esteem in which his contributions are held in foreign lands.

FLEMING CARROW, Detroit, Mich.

THE LIMIT; THE PROPRIETARIES.

QUINCY, ILL., Jan. 19, 1909.

Mr. Editor:—Commercialism and graft have always been the halting point with the honorable and ethical profession. The patent-medicine man has been fought to a standstill. The pure food law has helped in that. But who may not say that, like the Standard oil octopus or the Phoenix bird, he is rising from his ashes in another form, confronting us almost daily but clothed in the new garb of greater candor. Now candor is a very good thing; but often times the greater the candor the greater the graft. The alphabet is being chopped up and, with the help of imagination, made into new names for new drug combinations, musical and catchy, it is hoped, to the medical profession. Sometimes it represents one, sometimes more of the ingredients, sometimes the therapeutical claims. The claims are always new and superlative. Many of these are truly made, and when known to be so, being very handy, if suitable, there can be no objection to their use. But how are we to know of all these which come now in a flood with our mail almost daily? Moreover, how are we to remember their construction? We must necessarily forget the precise ingredients or propositions in many of them. The disproportion of ingredients to a series of cases, in which the conditions of the invalids vary while the ingredients do not, limits very much the usefulness of these hand-me-down, fit or misfit preparations. Perhaps some of them are as suitable as anything the physician could write for in a given instance or many, and they have the advantage of pharmaceutical preparedness and facility. Of course it is a question of judgment in selecting.

Faith is no further strained in these, where known to be good, than in the former more common practice. We must necessarily forget the precise make-up in many of them. To illustrate, let us take an instance: Suppose that the writer, whose name is Green, were to get up a pain-killer and wished to attach his name to it (for commercial or other reasons), as many of them do—"as a guarantee"—and to have the physician specify *just his*. Let the pain-killer, for instance, contain morphin, hyoscyamin, chamomile, atropin and lactucarium in a syrup, and of proper proportions. It is a pain-killer: *Dolor* is pain, as every physician knows. It is Green's, and *Viride* is Green, and so—happy thought—we will call it *Virdol*.

The physician, we will assume, thinks that is a very good pain-killer; I will remember it. After a few days he is called to see a child in great pain and he thinks of "Virdol" as just the remedy, but the exact ingredients and proportions he can not remember. His predicament is thus illustrated, where dependence is put too much on some one else's shotgun. Besides these fantastic names there is a fantastic price for these—"his only"—preparations.

It would seem that a pharmaceutical standard is better and the only one that is golden.

Again: the unsuitable proportions in many of these preparations is most striking and self-condemning, placing the result and physician's

success much in jeopardy. It strains the patient's pocket-book, time and faith and he quits. This, of course, does not apply to the per cent. of them known to be good. The danger is a too careless reliance upon them by the every-day physician.

Reasoning by analogy on the ingredients, as we are asked to do by these proprietors of a new name, and questioning as we have a right to do the fixed quantity and quality, may we not hesitate and ask, "what's the limit; is it really candor, condor or a Phoenix bird?"

H. L. GREEN, M.D.

Special Article.

A GENERAL PLAN FOR A SCHEDULE OF MEDICAL FEES.

J. N. MCCORMACK, M.D.

BOWLING GREEN, KY.

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I have long held the opinion that it was feasible to frame a plan for a schedule of medical fees which could easily be modified, as to the amount of the charges and other details, to meet the conditions and needs of almost any county or locality in any section of the country. As the plan I have in mind would be for the information, guidance and benefit of the public quite as much as of the profession, it involves conferences and a full understanding with the people of the community beforehand, as well as the fullest possible publicity afterward, through the public press, placards in each office, and otherwise, the explanatory footnote being made an essential part of every publication.

One of the main difficulties about this in the past has been the almost universal, but wholly erroneous, opinion and insistence on the part of both profession and laity that all the physicians of a community have an equal value and should make the same charge for their services. We know full well, and in a way and to an extent that the people can not, that nothing could be further from the truth. Because of the faulty system of medical education, loose medical laws, and lack of organization and incentives to study, in vogue in this country until recent years, there are regularly licensed physicians in almost every community in the United States, in cities and towns quite as abundantly as in the country districts, who are well paid for all they know or can do for their patrons when they receive anything, and I insist that the time has come for us to deal frankly and openly with each other and the public about this and all other matters of common interest. It is essential to the success of such a plan, too, that we abandon once and forever the antiquated notion of penalties for those who do not live up to the schedule, or blacklists for those who do not pay for services. Such harsh methods are contrary to the spirit and purposes of real organization and, in the very nature of things, can only be productive of misunderstandings and odium.

I have made rate-cutting and cheap doctors a matter of special study in every section of the country for years, and have come to have much sympathy for this class. On getting down to bottom facts, I have always found that they charged less for their services because they honestly knew, better than any one else did or could, that they were worth less than their competitors, and that this was their only chance to obtain or hold practice. There may be exceptions to this, but I have never found one that would bear investigation. They have my sympathy for another reason. As with the division of fees and commissions, contract and lodge practice, the use of proprietaries and nostrums, and similar mistaken practices and policies, all more hurtful to the people than to the profession, the fault is far more with the schools which pretended to educate these men than with them. In fact, without proper instruction about these matters during student life, so as to make it a part of their very being, just as important to the future physician and his patrons as instruction in anatomy or physiology, and sometimes with bad examples from their teachers to start them in the wrong direction, the wonder is that more of them do not do worse. These are just the men who most need the uplifting influences of county societies and postgraduate courses, they are actual entities with which we must live, associate or contend, and with tact and judgment many of them can be made competent. To suspend or expel them is far more of a punishment to their innocent patrons than to them, and it destroys the only chance of reclaiming them.

What is first and most needed in dealing with this class, for their own good as well as of the people, is to raise their earning capacity, to make them better practitioners and better men, by means of consistent, persistent postgraduate study, and by the influence and example of the higher grade members, in every county society and in such intercourse as comes in daily practice, and then in leading them to the adoption of systematic business methods and aiding them in other ways in securing better compensation. If we could substitute common sense plans of co-operation, the ideal of a real community of interests, of practical, kindly helpfulness, such as is common between lawyers, in the place of the habit of fault-finding, jealousy and aloofness which is still as easy to find as it is disgraceful between the physicians of many communities, the difficulties of this entire problem would be reduced to a minimum.

The county societies and postgraduate courses furnish the facilities for doing the scientific and social features of this work. For the business side of it I am advising that the profession in each county or city consider the advisability of arranging for systematic monthly collections, with a carefully selected business representative, and a centrally located "medical collector's office," the collector to be under bond, and on a definite salary, and with authority to appoint as many assistants as may be necessary, for whom he is responsible, very much as sheriffs and city collectors do. The collector should be a man of tact and judgment, he should hold the affairs of each physician as strictly private and confidential, and he should be well paid. This plan should not be tried any-

where until good scientific work is well under way and a spirit of harmony secured, until all of the details have been worked out with the kind of business representatives indicated, and until public sentiment is prepared for it. Even in large cities the plan is worthy of consideration for colony and office buildings, wards or other convenient groups, if it can not be made available for the entire profession. It will not be easy to do these things in any community, in fact, it is never easy to do any important reform work which is worth doing, but with such preparatory work as has been suggested, and with tact and judgment in the earlier steps I am convinced that the plan could be made as pleasant and convenient for the people as it would be helpful and profitable to the profession.

In most parts of the northwest and on the Pacific Coast the rate of charges sanctioned by custom is sufficient to sustain a competent and equipped profession, but in many sections of the eastern, middle and southern states, outside the large centers of population, and for a large part of the profession in them, all except the surgical fees are wholly inadequate, and this is operating to the disadvantage of both the profession and people now in a way unknown to our forbears. This country in recent years has passed through an era of the most remarkable prosperity, but physicians and other professional classes have not shared in it. With the cost of living almost doubled, and the cost of equipment for modern practice quadrupled, the income of medical men, except surgeons and specialists, has remained about stationary. Properly interpreted, poverty in the profession, and the lack of equipment and practical incompetency inseparable from it, is just as important to the public as to us, and the subject should be boldly discussed in public meetings and in the periodicals and daily press until this real, positive danger to the people is a matter of common knowledge. Not only the higher standard of incompetency, but the increased usefulness of the profession in other ways should be made plain. It now probably does more real charity than all the other vocations combined, but the generous support to which it is entitled, and which is demanded by the highest humanitarian interests, would enable it to do a systematic, intelligent, discriminating relief work which is now impossible. To an extent not dreamed of by the laity, or even by many in the higher ranks of the profession, a large per cent. of the physicians in this country, in cities and towns as well as in the rural districts, on account of poverty and the pressing needs of their own families, are daily forced to take what is almost blood-money from a class of widows, teachers and working-women, in their times of affliction, whose incomes are so scanty when well, that it would and should be an honor and a pleasure to make them the special wards and beneficiaries of a properly supported profession.

The opportunity has come to me to study this whole question as no other man probably has ever been able to do. I am giving the results of this broad experience in my public talks every evening, and find, in the lay discussion which follows, that the people can be made to appreciate our difficulties and their dangers quite as readily as can the pro-

fession. In truth, unpleasant as is the admission, the trouble is with us and not with the public, as is true in regard to almost every other evil from which we suffer. If the physicians competing for the same practice in every section of the United States could really get together in all these matters, and then take the people into their confidence, the balance would be comparatively easy, as there are not enough of them to do the practice if every patient was given the time, and the kind of scientific examination and treatment, to which they are entitled.

For many reasons, any schedule intended for general adoption should cover only the ordinary fees for general practitioners and non-operative office work. Surgical fees are usually the subject of special arrangement, and, anyway, they vary to such an extent that an attempt to include them would give the public an exaggerated and misleading notion of what is received by the ordinary surgeon, or by any of them except under extraordinary circumstances, and would do more harm than good. As a rule, too, surgeons and specialists are better paid and are well able to take care of themselves. Besides, my experience has convinced me that it is in the field of general and office practice, with the hard-worked and underpaid ordinary practitioners, that the pressing need for reform exists.

For obvious reasons the schedule should be adopted by the profession as a whole, or as individuals, and not by the county society. The provision in the by-laws forbidding such action by the societies was inserted after careful consideration, was certainly wise under the conditions then and still existing, and probably should be permanently retained. The membership in most societies embraces only from one-half to three-fourths of the physicians of the county. While it is probable that all, including the former sectarians, will finally come in, this will be the work of years, and although not absolutely essential, it is important that the schedule be agreed to practically by all of the active physicians of the jurisdiction, whether members or not. Besides, this has been one of the most fruitful sources of discord in societies in the past, often provoked by those who took least interest in the scientific proceedings.

With all the foregoing considerations in mind, and after the matter has been fully discussed with the people, the schedule and footnote, in their main features, are suggested only as the basis for discussion. The rate of charges will seem too high for some sections and entirely too low for others. I am proposing about what, in my judgment, would be fair and equitable at the present cost of living and equipment in the central, middle, western and southern states, but, of course, the exact fees and other details must be arranged for each community in accordance with what is deemed just and proper. The rates should not be too hard and fixed. There are people of moderate circumstances in almost every community, factory operatives and others, who ought to pay something, and yet should not pay full fees, and a wise discretion on this and similar points must be provided for in any plan which is to be comprehensive and successful.

The order of arrangement and the items of practice included are as seems best suited for most counties and communities, but the purpose is to make it so simple and flexible that it can be altered to suit varying conditions and views. For instance, if it is thought best, fees for fractures and dislocations, or any other surgical or special work, can be easily added. It will be noted that a broad distinction is made between ordinary and complete office examinations, including a thorough examination of the chest, urinalysis and other like work involving extra time and skill. My own opinion is that a double charge should be made for night practice for well-to-do people, but I have yielded to the views of others on this point. Telephone practice is so annoying, exacting and unsatisfactory that it certainly should be paid for except where regular visits are being made, and in all cases after bed-time. Consultations are purposely made low in order to develop and encourage this variety of practice.

The form of schedule suggested and the footnote, as they should go on the placard, are as follows:

SCHEDULE OF MEDICAL FEES FOR ——— COUNTY.

1.	Day visit in town	$2.00
2.	Night visit in town	3.00
3.	Day visit in country, first mile, $2.00; each after mile, one way	1.00
4.	Night visit in country, first mile, $3.00; each after mile, one way	1.50
5.	Ordinary office examination and advice	1.00
6.	Complete examination and advice	5.00
7.	Advice or prescription by telephone	1.00
8.	Obstetric case, uncomplicated, not over 6 hours	15.00
9.	Life insurance examinations	5.00
10.	Consultation, double ordinary visit.	
11.	Surgical and other special fees as may be arranged.	

EXPLANATORY NOTE.

This schedule of fees is purely advisory. It is arranged and published for the information and guidance equally of the profession and people. It is intended to suggest the fees for ordinary services by competent physicians, for these fully able to pay their bills. It in no way applies to practice for the deserving poor, of which all agree to do their full part. It may be that physicians who are less competent will feel that they should charge less for their services. This is recognized as just, and to do so will in no way affect either their society membership or professional standing. It is especially important that these less fortunate members should have the benefit of the postgraduate study courses and other scientific work of the county society, which are free to all, for their own good as well as that of their patrons, and regular attendance at these meetings should be made a condition of continued employment. Night fees are made higher for many reasons, but more especially to give time for such study and society work as is essential in keeping a physician competent to practice with safety to the people.

For the convenience and benefit of both the profession and its patrons, systematic monthly collections, in so far as possible, are requested in the future. It is believed that it will be more satisfactory to families to settle their accounts while they are small, and while they remember and are grateful for the services, and it will enable physicians to keep equipped for far better service.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

The Adams County Medical Society met Jan. 11, 1909, in the Elks' clubrooms, with the new president, Dr. Henry Hart, in the chair. Others present were Drs. Pendleton, Christie, Jr., Koch, Robbins, Rice, Pitman, Gilliland, Ashton, Gabriel, Williams, W. W. and J. G., Ericson, Knox, Haxel and Wells. The president announced his committees for the year as follows: Program, Drs. Wells, Baker and Koch; Legislative, Drs. Johnston, W. W. Williams and Grimes; Social, Drs. Kirk Shawgo, Ericson and Collins. The most comfortable Elks' hall was secured for the society's meetings for the year 1909. Dr. J. A. Koch, a delegate to the recent Tuberculosis Congress at Washington, made a fine report of the sessions, and his report was requested to be published in the State JOURNAL. The communication from the Bureau of the Census relative to the importance of vital statistics was read and specifically endorsed by resolution to our representatives in the state legislature, and referred to the county legislative committee. A resolution of thanks was passed to Drs. Abby Fox-Rooney and Henry M. Rooney, wife and son of the late Dr. Michael Rooney, for a fine gift of medical books from the library of the latter. Miss Mary C. Wheeler, superintendent of Blessing Hospital, by invitation, addressed the society on the subject of "The Visiting Nurse." The society heartily endorsed the movement looking towards the inauguration of that special line of nursing in this city. Adjournment to Hotel Necomb for luncheon, after which came the Symposium on Influenza, with Dr. Walter Wessels, Mendon, discussing the etiology and pathology; Dr. Ray Mercer (whose paper was read by the secretary), Loraine, dealing with the symptoms and complications, and Dr. J. M. Grimes, Coatsburg, taking the treatment of the disease. The symposium aroused animated and general discussion.

CLARENCE A. WELLS, Secretary.

BI-COUNTY (IROQUOIS-FORD).

The fifth annual meeting of the Bi-County (Iroquois-Ford) Medical Society was held at Watseka, Ill., on Tuesday, December 1, 1908.

After dining together at the Iroquois House all repaired to the Court House, where Judge Gillen had kindly tendered the society the use of his court room. Order was called by the president, Dr. T. N. Boue. The minutes of last meeting were read and approved, and the regular business of the session transacted. The following were then elected officers for the ensuing year: President, Dr. J. Y. Shamel, of Gibson City; vice-president, Dr. Horace Gibson, of Sheldon; secretary-treasurer, Dr. Robert Lumley, of Watseka; censor, Dr. D. W. Miller, of Gilman. The following resolutions were then presented and unanimously adopted:

"Since our last annual meeting two of our charter members have been summoned by the grim Angel whose mandate of arrest none may resist. We miss their genial presence and cheery greetings; but we look and long for them in vain. They have laid down life's burdens, duties and responsibilities, and passed into the unknown realm of Silence, whence no traveler e'er returns.

"Samuel Dauphin Culbertson was born in 1839, and early inclined toward a medical career, but when his country needed all her loyal sons to save the Union patriotism proved a stronger lure than ambition, and he enlisted in the ranks of Company F, 150th Pennsylvania Volunteer Infantry, which was speedily sent to the front. His left shoulder shattered by a rifle ball at Fredericksburg, and utterly incapacitated for further service by rheumatism and scurvy (from the after-effects of which he never entirely recovered), he was honorably discharged

Then, though still sick, suffering and wasted almost to a skeleton, he entered Jefferson Medical College, from which he graduated in 1866. After some years spent practicing in his native state he moved to Illinois, where he was licensed to practice in 1878. Modest and unassuming manners, united to perseverence as a student, won him real worth as a practitioner, and gained for him the confidence and esteem of his colleagues. That he retained their respect and good will is obvious when we remember that last year he was president of this society and was a member of the Illinois State Medical Society and the American Medical Association at the time of his death. He happily was able to participate actively in life's affairs until the last. His final illness (pneumonia) was inaugurated by a chill which occurred while making a country call but a few days before he died. In feeling and character Dr. Culbertson belonged to a class of physicians said to be now passing rapidly away. He was of the type to which Watson paid such touching and merited tribute in "Dr. MacClure," and of whom Stephenson, who knew whereof he spoke, truly said: 'The physician is the flower (such as it is) of our civilization; and when this stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race.'

"Leonard R. McIntyre was born in 1868. After the usual preparatory studies he entered the University of Nebraska College of Medicine, from which he graduated in 1897. He immediately located in Illinois, and was licensed to practice in this state shortly after his graduation. Genial, popular and active in the profession, he was one of those who helped to organize this society, of which he has been a highly esteemed member throughout its entire history. We, his colleagues, who knew him so well, learned of his untimely taking off with real regret, and mourn him with sincere sorrow."

The scientific part of the program was a symposium on "Blood Poisoning," divided as follows: "Sepsis Arising During Parturition," by Dr. Horace Gibson; "Sepsis Following Wounds," by Dr. N. H. Kern; "Sepsis Due to Other Causes," by Dr. G. W. Ross. Each of the papers was up to date, and showed broad reading, experience and reflection. The discussion which followed was general, animated, instructive and interesting.

ROBERT LUMLEY, Secretary.

CLARK COUNTY.

The Clark County Medical Society met in regular monthly meeting in Dr. Burnsides' office, at 3 p. m., Wednesday, Jan. 6, 1909. Members present: Mitchell, Burnsides and L. J. Weir. Dr. Mitchell quizzed on "Anatomy and Physiology of the Kidneys," presenting the subject in detail in a thorough and entertaining manner. Dr. Rowland being absent, Dr. Weir presented the subject, "Acute Nephritis, Etiology, Symptoms and Treatment." Society adjourned, all agreeing it was one of the most interesting and profitable meetings ever held.

L. J. WEIR, Secretary.

COLES COUNTY.

A meeting of the Coles County Medical Society was held Tuesday, Jan. 5, 1909, at 8 p. m., at the Charleston Public Library, Charleston, Ill. The following program was given: "Fistulous Tracts, Tuberculous, Sinus and Abscess Cavities; New Method and Treatment," Dr. A. T. Summers; discussed by Drs. Bell, McDonald and Fry. "The Use of Digitalis in Heart Diseases," Dr. J. B. Baker; discussed by Drs. Ikanayan, Alexander and Bennett. President's address, Dr. T. O. Freeman; election of officers; luncheon; "Ethical Side of the Medical Profession," Dr. J. T. Montgomery.

The following officers were elected for the ensuing year: President, Dr. Cleaves Bennett, Mattoon; vice-president, Dr. G. B. Dudley, Charleston; secretary-treasurer, Dr. R. H. Craig, Charleston; censor, Dr. J. W. Carter, Mattoon.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Nov. 25, 1908.

A regular (clinical) meeting was held November 25, 1908, with the president, Dr. Alfred C. Cotton, in the chair. Dr. Victor J. Baccus reported and exhibited the following cases: (a) Nephrectomy for a hypernephroma of left kidney; (b) partial cystectomy for carcinoma of the bladder; (c) Gunshot wound of the right knee joint, with division of the right external popliteal nerve, drainage of knee joints, suturing of nerves, recovery of motion in joint, and beginning evidence of nerve regeneration; (d) Dupuytren's contraction. Dr. William Hessert reported two cases and exhibited the patients, one of acute tetanus and the other a case of arthroplasty of the elbow joint. Dr. Cassius C. Rogers reported a case of multiple cysts of the brain and exhibited the patient. The various cases were discussed by R. H. Good, Max Reichmann, William Fuller, Gustav Kolischer, A. J. Ochsner, Carl Beck, A. P. Heineck, M. R. Barker, and the discussion closed by Dr. Rogers.

DISCUSSION ON THE CASES OF DRS. BACCUS, HESSERT AND ROGERS.*

Dr. R. H. Good:—On April 24, last year, I was called in consultation in this case at the Frances Willard Hospital. The patient complained of very severe headache and of excruciating pain in the region of the right frontal sinus at its inner angle. She had this pain so severe that when I made percussion over the frontal sinus it increased in intensity, and making pressure anywhere over the frontal sinus or over the supraorbital region would aggravate the pain. The pain radiated to the mastoid region, which is frequently the case in frontal sinusitis. Bending over to pick something up would cause increased pain in the frontal sinus. Sneezing or blowing the nose increased the pain in the sinus. There was ptosis of the right upper lid, the patient being able to open the right eye but slightly. There was paresis of the superior rectus, inferior rectus, and internal rectus, showing involvement of the third nerve. The pupil was dilated considerably and only reacted slightly to light. When asked to look towards the left the left eye would move over, but the right would only move partly. When asked to look up, the right eye would move partly, and the same way in looking downward.

On examination of the nose I found a marked deflection of the septum to the right in the region of the middle turbinate pressing directly against the middle turbinate. The middle turbinate was somewhat enlarged. On further examination I found a little mucus in the middle meatus; I could not see any pus at this time. The *x*-ray shows a marked darkness over the right frontal sinus, as is seen in the *x*-ray picture. Transillumination with Freer's lamp revealed a considerable shadow over the right frontal sinus. At this examination I endeavored to cocainize the middle meatus and middle turbinate thoroughly with adrenalin chlorid and cocain, thinking that this would allow drainage to be established and the symptoms to subside; but the patient suffered just as much after this treatment as before, and, in fact, spent an uncomfortable night, so that the next day I was obliged to do something. I then performed my frontal sinus operation by the intranasal method under local anesthesia, and that same night the patient slept better than she had for six weeks. Usually, however, after cocain anesthesia, such patients do not sleep so well for the first night. She was entirely relieved of the pain after the operation, and since then there has been no recurrence of it. Then next day after the operation the ptosis was gone. Both eyes opened. The muscular action did not resume its proper function until a week later, when she lost the diplopia she previously had. The pupil did not return to its normal size. I have not seen this patient for months, but I see the pupil tonight is normal. Two weeks after operation vision in this eye, with proper cor-

*For text of papers see page 178.

rection of glasses, was normal, whereas before the operation the patient tells me that the vision was not normal. The patient being in the hospital I was unable to make an accurate visual test. (Here Dr. Good illustrated his intranasal method of operating).

Three and a half weeks following this operation she returned to the hospital and I found some edema above and below the canthus of the right eye. There was tenderness on pressure in this region and pain between the two eyes; she had a temperature of 100°. I curetted the anterior ethmoidal cells and the pain subsided immediately after that operation, and since then, so far as I know, she has had no symptoms whatever of either frontal sinusitis or ethmoiditis, her pains being located elsewhere. There was a discharge in this case for about two or three weeks after the operation, but when I examined her about six months ago this discharge had ceased. I do not think that this frontal sinusitis was caused by the cysts in the brain.

Dr. Max Reichmann:—Dr. Baccus tells us about the skiagrapher making a diagnosis of enlarged kidney in the case he has reported. Such a diagnosis is quite an achievement in the art of radiography, and it can be made on the left side, where there is no liver, or where there is no dense tissue covering the kidney, and also if the intestines are perfectly empty.

In the last four weeks I had occasion to make some roentgenograms for different members of the society, and in three or four instances I was able to make a diagnosis of tumor of the left kidney which afterwards was proven to be correct by operation.

If I am permitted, Mr. President, I would like to make a remark with reference to the case of Dr. Rogers. I am very sorry that the Roentgen rays were not used in that case, because cysts of the brain can be diagnosed with almost absolute certainty by the Roentgenologist. The density of the cyst and the density of the brain tissue are so different that shadows are perceptible.

Dr. William Fuller:—The diagnosis of hypernephroma is not only a difficult matter before its removal but is not always easy to recognize after its removal. It is not alone necessary to learn the nature of such a tumor before operative interference is resorted to, but we should determine always the presence or absence of secondary deposits before any radical treatment is instituted.

Hypernephroma is a tumor that is prone to metastasis, and I think in a suspected case of this kind that sensations of pain or discomfort in other parts of the body, should be looked upon with suspicion. It is in the long bones particularly, as well as in the lungs, liver and intestines, that secondary deposits are found, and when symptoms are present indicating trouble in these organs it is the surgeon's duty to rule out a metastasis here before any operation is performed.

The microscopic diagnosis of perfectly typical tumors of the kind under discussion is, of course, not difficult, but many such tumors are not typical and are frequently so entirely unlike the hypernephroma ordinarily seen, both macroscopically and microscopically, that in order to reach a diagnosis it requires prolonged study of the tumor by a skilled pathologist. The best example of this kind of tumor is the so-called lipomatoid hypernephroma, a very typical one of which was recently reported by Dr. Holmes and which was examined by Dr. Wells. In this instance more than half of the tumor was sectioned before sufficient evidence was obtained to correctly name this tumor.

I would say a word further with reference to the measure or means of determining the presence of the other kidney when about to do a nephrectomy. Dr. Baccus referred, if I understood him, to the practice of transperitoneal exploration for the purpose of settling this point, and mentioned the ease with which it could be done. Extraperitoneal incisions should, I think, always be preferred to intraperitoneal incisions, especially when information about the kidney is desired. There is more or less danger under any and all circumstances of infecting the peritoneal cavity when it is opened, and the incision behind or in the loin of the

other side obviates this danger, and, as has been stated by several, especially Andrews, affords ready and satisfactory information of the presence of the healthy kidney.

Dr. Gustav Kolischer:—I would like to say a few words with reference to the tests for determining the functional capacity of the kidney. I think the skepticism displayed by Dr. Baccus in relation to tests for determining the functional capacity of the kidney is very justified, as there seems to be an idea that we are in a position to determine positively whether a kidney is insufficient or not, and that if the diseased one is removed, and the other is insufficient, the patient will die. There is no such method which can do that for us. All the methods of testing the functional capacity of the kidneys are reliable only in one sense, and that is in a positive sense. The phloridzin test is neither reliable in a positive nor negative sense. All other tests, whether based on the skill of the clinician, the density of the staining in the urine, if indigo-carmine is used, or another drug, or the time after which the staining drug will appear in the urine, are reliable in a positive sense only. This was first shown by Rovsing. An error which Casper and his followers made was this, that if functional tests showed the other kidney was insufficient, then they did not operate for the removal of the diseased kidney, consequently the tests as carried out by them were not reliable. Rovsing operated successfully on cases in which one kidney was diseased and the other determined to be insufficient.

Dr. Louis Schmidt and I determined tuberculosis of a kidney, and by the known tests its mate at the time appearing insufficient, and yet, after Dr. Bayard Holmes removed the tubercular kidney, the patient recovered, the other kidney resuming its normal function.

As to the diagnosis of tumors of the kidney, the use of the cystoscope is of value. There is one thing which is rather surprising to me, and that is in a great many tumors—hypernephroma, for instance—even if they do not break through the capsule or break into the parenchyma, we may still find a hemorrhage. Why I do not know, but it is difficult to explain. There is one symptom which will lead to suspicion in the early stages, that is, if there is any disease of the kidney, whether there is a pelvic stone, or a small tumor of the pelvis of the kidney, or whether there is a malignant tumor, even if it does not yet break through the capsule, the respective ureteral opening is changed in appearance.

So far as tumor of the bladder is concerned, I am glad that our method was spoken of by Dr. Baccus as feasible, and I think it is preferable to the one revived by the Mayo brothers. It was proposed years ago by Rydygier to operate intraperitoneally. We do not get any more access by this method and we expose the peritoneum to the danger of infection.

Dr. A. J. Ochsner:—I wish to refer to one or two practical points made by Dr. Baccus, one in regard to the operation for Dupuytren's contraction. The result in this case is beautiful. Those of us who have had much experience in operating upon these hands know that until very recently the results have rarely been as satisfactory as the result in this case, and the reason why this result is so perfect is because the entire contracted fascia was removed, in the first place, without regard to the skin; then the lost skin was replaced by healthy skin from the posterior surface of the little finger. That is a very important point in securing good results. The little finger had no value because, as I understand, the contracture had extended to the palmar surface of the finger; that finger was consequently in a hopeless condition, unless one could possibly have succeeded in saving it by first removing all of the contractured tissue and then using the old method of Salzer of making transplantation by inserting a finger under the flap, and getting thick skin to cover over the finger in that way. But the results even then are not nearly so satisfactory as in this case, where you get an excellent piece of skin from the posterior surface, which is perfectly normal. In that way the skin overlying the contractured fascia which is implicated does not have to be regarded.

Regarding the case of nerve suture, I wish to bring out a point which has only recently been referred to in the literature, and which some of the surgeons

here may not have encountered as yet. In suturing the nerves, as in this case, it was not necessary to make use of this method because the nerve was severed by means of a bullet. If it had been shot off the same point with a charge of bird shot, so that a large portion of the nerve would have been destroyed, this method might have come into play. But it is worth mentioning. The method consists in making a suture at a distance in the usual manner by carrying fine strands of chromicized catgut from end to end and enclosing these catgut strands together with both ends of the severed nerve in the lumen of a piece of vein. The long saphenous vein should be chosen if the injury is in the location where it was in this case. This vein is cut out and the sutures are passed through the vein, and the vein is drawn like a tube over the whole space that has been sutured at a distance, and then when these sutures are tied, the vein, which has been kept over the center of the sutures, is simply stretched over the ends and there attached by means of a few small catgut sutures, so that we have the ends of the severed nerve connected by means of the ordinary catgut sutures, giving the axis cylinders direction and to have the entire area enclosed in a piece of the patient's own vein, so that we again produce a condition similar to the condition we have when we remove the nerve from the canal in the lower jaw. In a few months that nerve grows again, extends through the canal, and becomes attached again. So we have here a method of nerve suturing which seems to be better than the decalcified bone method, the fascia method, or any of the methods that have been in vogue for a long time.

Dr. Carl Beck:—I would like to make a few remarks in regard to the cases reported by Dr. Baccus.

The case of hypernephroma is one that interests us all, and as to the clinical way of testing the functional capacity of the other kidney, Dr. Baccus mentioned a case in which I at one time left a kidney for a number of days outside of the body in order to test the value of the other kidney, without resorting to a laparotomy or any method of exploration. The same method has been used by Casper, as he mentioned, only that in such a quick way, as Casper himself wanted to show, the kidney will not answer in every instance, and it will be difficult to make a positive test. You can leave the kidney outside of the body, as I have left it, for eight days. You can leave it for a number of days longer, and then be sure about the functional capacity of the other kidney; but in case there is no other kidney, or there is insufficiency of the other kidney, the kidney which contains some secreting substance can be replaced safely when the other is removed, as I did in the case that has been referred to. Dr. Baccus did not mention what Dr. Kolischer has alluded to, that is, the second kidney sometimes, after removal of the other kidney, gains in functional capacity. Such a gain was noticeable in my case, so that the test is valuable if any one wants to use it.

There are a number of clinical tests which have been very well studied by a number of surgeons and practiced, but none of them is exactly reliable in one sense.

I would like to say a word or two with reference to the case of Dr. Rogers of multiple cysts of the brain. Cysts of the brain are in most cases of traumatic origin. It is to be regretted that Dr. Rogers did not remove some of the contents of these cysts, so that we can examine the material microscopically, since multiple brain cysts are very rare. Unilocular or multilocular cysts of the brain are almost entirely of traumatic origin, that is, a hematoma is gradually transformed into a cyst. They are the easiest and most gratifying tumors of the brain to operate on, and, as Dr. Reichmann has said, they can be detected by the *x*-ray, if of any size, and the diagnosis made.

About eight or nine years ago I exhibited before this society a cyst of the brain of the size of an egg, which I had removed, and which Professor Klebs at that time examined, and found that the cyst was of traumatic origin, formed around a hematoma, the result of a fall from a certain height. The case occurred in a little girl.

It is also regretable that Dr. Wilder, who examined the eyes of this woman, is not here to give us the results of his examination, because undoubtedly the eye findings would be very interesting, as bearing on the etiology, and it would be very important if this case was a little further examined as to its etiology.

Dr. Victor J. Baccus:—I wish to thank the members who have discussed the papers I have reported and presented, and especially Dr. Kolischer for his remarks with reference to these functional tests in speaking of the case of hypernephroma, as he has explained them more clearly than I could have done.

In regard to the case of gunshot wound of the right knee joint, I will say that in some of these cases, when the nerve has to be sutured at a distance, some one has suggested the use of desiccated artery obtained from animals, that is, desiccating the artery and introducing it into the ends, forming a tunnel for the ends of the nerve. I believe this would be a better method, because we are using tissue from a human subject, and the autoplastic method is better than the heteroplastic.

As to the case of Dupuytren's contraction, the incision was made along the inner surface of the palm of the hand, in order to avoid making a new scar in the already contracted skin; therefore, we had partial sloughing of the skin, on account of the dissection at first, which I thought was limited to two fingers, but after the skin was opened it was seen that the fascia extended not only to the ring finger but also to the other two fingers, and I dissected the entire area from the palmar fascia, and in doing so the inner margin sloughed to about the size you see. Furthermore, the finger at the proximal joint was so ankylosed, or so interfered with by its position that we could not effect apposition, and so we replaced the skin lost in the palm by amputation of the finger and utilized it.

Dr. A. P. Heineck:—In tetanus we have an acute infectious disease which, in all of its different clinical forms, has a frightful mortality. There are still many points concerning our knowledge of this disease that demand elucidation. Since the discovery in 1884, by Nicolaier, of the bacillus tetani and its cultivation, in pure cultures, in 1889, by Kitasato, the exciting agent of all cases of tetanus is known. For all the different clinical forms of the disease (head tetanus, tetanus neonatorum, puerperal tetanus, postoperative tetanus, traumatic tetanus, etc.) we recognize only one exciting factor, the tetanus bacillus. Furthermore, we know that the disease has a variable period of incubation, the average period being from five to ten days. It has been clinically observed that the shorter the period of incubation the greater the probability of a fatal termination. The disease has no specific pathological anatomy. In some of the cases marked congestion of the cerebrospinal nervous system has been found, with or without a marked hyperemia and thickening of the pia mater, etc. No constant changes have been found in the peripheral nerves. Such findings as we have in some cases of tetanus are not characteristic. They occur in other infectious diseases, and it must not be forgotten that in some of the cases that have come to the autopsy table the findings were negative.

With the many different forms of treatment, and probably despite them, some cases have terminated in recovery. I always feel like congratulating a surgeon who carries a case of tetanus to a successful issue.

Of the many medicinal agents that have so far been employed in this disease, all have been used to meet indications symptomatically. Opium and its alkaloids, calabar bean, curare, carbolic acid, cannabis indica, the bromids and chloral (the latter especially have been recommended), all have been successfully employed in some cases. James Stewart says: "Of no drug can it be said that it has a marked effect for good in severe cases, and as recovery follows all possible modes of treatment in mild attacks, it is natural to conclude that the drug treatment of tetanus is far from satisfactory."

The antitetanus treatment, though successful in the lower animals, is, when employed in the human being, of very doubtful efficacy as a curative agent. Most clinicians have lost faith in it. Antitetanic serum has been injected subcutaneously, intramuscularly, intravenously, intraneurally, intracerebrally and intra-

spinally. The results have been discouraging; they have so often been disappointing that most clinicians have lost faith in this agent as a cure for tetanus.

I do not dispute that it is wise to give it as a prophylactic measure in wounds concerning which one is apprehensive of tetanus infection. It has been my practice in all Fourth of July wounds, in all wounds contaminated by street dirt, in all punctured wounds of a suspicious nature, to inject subcutaneously, for prophylactic purposes, 10 to 20 cubic centimeters of antitetanus serum. I have never seen a case of tetanus develop after the prophylactic employment of antitetanus serum. Therefore, it is with a conviction that I urge the employment of antitetanus serum as a beneficent protective measure. An early vigorous and thorough antiseptic treatment of the wound must never be omitted.

I know that Paul Reynier, *Bulletin et Mem. de la Societe de Chir. de Paris*, 1907, Vol. 33, page 85, has succeeded in collecting from the literature thirty-two cases of tetanus that have developed after attempted immunization with antitetanus serum. These cases are not recorded enough in detail to shake my clinical conviction as to the great value of this serum as a prophylactic agent.

Although the solution of magnesium sulphate has been previously employed to combat established tetanus infection, yet when successfully employed by a clinician of Dr. Hessert's standing in the surgical world it commands consideration.

Joseph A. Blake, Margan Franke and G. Canby Robinson have each employed this agent in the treatment of tetanus and have employed it with success. I myself have dismissed this very afternoon from the West Side Hospital a case of acute tetanus, the recovery of which I feel inclined to attribute to the employment of magnesium sulphate. In my case, a robust young man, 17 years of age, the infection developed seven days after stepping upon a rusty horseshoe nail.

At the time of his admission to the hospital, Oct. 22, 1908, the wound of the foot, the portal of infection, was completely healed. The manifestations of the disease were so classical that a diagnosis was self-evident. There was lockjaw, opisthotonus, rigidity of the thoracic and abdominal muscles, etc.

In this case I injected, on five different occasions, 5 cubic centimeters of a 25 per cent. solution of magnesium sulphate, filtered and sterilized. The injections were all made into the spinal subarachnoidal space. Each injection was followed by a marked lessening of the muscular rigidity and a general improvement of symptoms. This general betterment would last about a day. The technique of these injections is easy, being that of a lumbar puncture. All the injections were made through the interspace between the spinous processes of the fourth and fifth lumbar vertebræ, making as a landmark an imaginary horizontal line connecting the highest points of the crests of the ilia. The intraspinal injections of magnesium sulphate solution were made on Oct. 23, Oct. 25, Oct. 26, Oct. 28, Oct. 30.

Owing to the muscular rigidity existing in this patient, the injections had to be made with the patient lying in the right lateral recumbent posture. No anesthetic was used and none is necessary.

In addition to the above, on the day of admission of the patient, the 22d, he was given 7,500 units of antitetanus serum, 4,500 units in the spinal subarachnoidal space, 1,500 units around the left sciatic nerve (point of inoculation being the left foot) and 1,500 units subcutaneously. On the 23d he was given 7,500 units subcutaneously, on the 24th he was given 6,000 units subcutaneously, and on the 25th and 26th each 6,000 units into the spinal cord, 1,500 units into the left foot and 1,500 units in the left sciatic nerve; on the 28th 1,500 units into the spinal cord, 1,500 into the left sciatic nerve and 1,500 into the left foot; on the 30th he was given 6,000 units into the spinal cord and 3,000 units subcutaneously.

The patient left the hospital in less than a month after admission, having fully recovered. I must add that in the active course of the disease he was obstinately constipated and that during the first week he had to be catheterized. The constipation was overcome on several occasions by subcutaneous employment of physostigmine, in doses of 1/100 gr., as in the first few days the firm locking of the jaws prevented the giving of cathartics by mouth.

As to Dr. Baccus' case of nerve division through a gunshot wound, we can state that it is now an established principle that, when feasible, the restoration of continuity of divided nerves must be attempted. For the restoration of continuity of divided nerves we have recourse to primary or secondary nerve suturing. The former, it has been clinically noted, gives the best results. So we will accept as an established principle that in all cases of traumatic nerve division the proximal and peripheral ends of the nerves should be united. For the restoration of function this reunion of the divided ends is essential. In all fractures, be they open or subcutaneous, it is important that the medical attendant determine, among other facts, the presence or absence of coexisting nerve division. He does this by testing for disturbances of sensation and motility. Failure to do this is liable to place one in an embarrassing position. For instance, at the Cook County Hospital, we have had several cases of fracture of the arm that have applied to the institution about six weeks after the accident. The bone had united but there was existent a musculo-spiral paralysis. We could not tell, owing to the insufficient data at hand, whether this paralysis was a compression paralysis or a division paralysis; that is, whether it was due to the compression of the muscular spiral by or to inclusion in the callus, or whether the same violence which fractured the bone had at the same time divided the nerve.

The therapeutic indications in these two conditions are different. If the paralysis be due to nerve compression, expectancy for a period is permissible. Some of the excessive callus may be absorbed and recovery may take place without operative intervention. If the paralysis be due to nerve division, then delay is detrimental to the patient; it jeopardizes ultimate functional recovery. The indication in all cases in which the nerve has been completely divided (that is, in mixed nerves of sufficient functional importance), is operative intervention to reestablish the continuity of that nerve. Failure to do so entails permanent motor and sensory disability. I have now under my care at the Cook County Hospital a healed compound fracture which involved the elbow joint. It was a separation of the lower humeral epiphyseal cartilage. The patient has recovered from the fracture. Through an oversight at the time of admission to the institution and also partly owing to the fact that it was not at that time believed that the arm could be saved, it was not noted whether any of the important nerves of the arm had been divided. There is now a complete paralysis of all the muscles of the forearm that are innervated by the musculo-spiral nerve. What is that paralysis due to? Is it a compression paralysis or is it a division paralysis? We have not yet determined. We are treating the case expectantly. If improvement does not start in early, then I will have to intervene by operation to determine and correct the condition.

About three years ago I had at the Samaritan Hospital a case somewhat similar to the case reported by Dr. Baccus this evening. This case worried me somewhat. It was a gunshot wound of the thigh in which the bullet had lodged in the tissues. There was profuse hemorrhage, the source of which was a wound of the superficial femoral artery. This called for exposure of the vessel at the bleeding point. The proximal and the distal end were ligated. Upon exploration it was seen that the bullet was embedded in the sciatic nerve. I removed the bullet. Bullets, if they be accessible, whether they cause disturbance or not, should be removed. About ten days after ligation of the superficial femoral artery, there was a secondary hemorrhage. It was partly interstitial, partly external. I was under the impression that the hemorrhage came from the superficial femoral, but upon exploration I found that the blood came from the deep femoral, which latter vessel I ligated. A severe inflammation continued for some time and then a secondary hemorrhage occurred from the superficial femoral. This I controlled by ligating the common femoral. The patient ultimately recovered with only slight limitation of function, which limitation was due to the destruction of the muscular tissues by the long continued suppurative process. He has now recovered entirely. The interesting feature of that case was that, despite the fact that I ligated the common, the superficial and the deep femoral arteries, the nutrition of the limb has not been interfered with. The impact of

the bullet against, and its subsequent lodgment in, the sciatic nerve was not followed by permanent paralysis. This case did not require nerve suturing because there was not a complete nerve division. It was a separation of some of its fibres and a division of others and not a complete division of the nerve.

Dr. M. R. Barker:—It seems to me we should not allow Dr. Hessert's paper concerning arthroplasty of the elbow joint to pass without discussion. I think we should congratulate Dr. Hessert upon the manner in which he managed this case. There is no class of cases, excepting those of malignant disease, or perhaps operations upon the central nervous system, that I approach with more anxiety for end results than those of chronic ankylosis of joints, regardless of the etiological factors that have caused them. Especially is this true if the procedure inaugurated has for its object the restoration of joint function. I believe, however, that when the condition is due to fracture, especially in the young, that these cases offer by far the best prognosis, because the tissues about and within the joint are not devitalized by diseased conditions.

It has become my practice in the last year or two, in cases of chronic ankylosis of the elbow joint caused by disease, for instance, chronic rheumatism, or arthritis deformans, etc., when contracture is present, as it usually is, and the forearm is in about this position (indicating) or at about a right angle to the arm and the shoulder joint is normal, to advise against operative procedures. Of course, these cases nearly always occur in older subjects. We may, in attempting to remedy an ankylosis of the elbow joint, when in the position mentioned, do more harm than good by reason of the danger that exists of getting a loose or flail-like joint, rather than restoring function in the joint. I am always skeptical about restoring function, in chronic ankylosis of joints, due to disease. There are many cases, however, of chronic ankylosis of joints due to disease, for instance, the knee joint, where we may do a resection for the purpose of making a useful limb, that we may approach with great confidence of success. These cases, however, are entirely different from attempting restoration of joint function. I am grateful to Dr. Hessert for presenting this case.

Dr. Cassius C. Rogers (closing the discussion):—Just a word with regard to the *x*-ray picture. The picture was taken a year before the patient was operated on for brain cysts. It was not taken for the brain trouble, but for frontal sinus disease.

As to the etiology, which was referred to by Dr. Beck, I have no doubt it was an intradural hemorrhage. She had the symptoms of intradural hemorrhage, but not localized, tingling sensations, etc. In intradural hemorrhage we do not have pressure like we do in extradural hemorrhage; it spreads over a greater area. In a case recently observed there were violent contractions of both legs and both hands, with twitching of the face. This case was sent to me about two months ago, in which I made a diagnosis of intradural hemorrhage, opened up the dura, and the patient got well. We have not a complete paralysis in cases of intradural hemorrhage like we have in extradural hemorrhage. We have tingling sensations, numbness, and partial paralysis, with a sensation as though the arm and hand are asleep. The cyst wall in the case reported was not dissected out, because I did not believe it was necessary, and I have seen a similar course pursued in Horsley's clinic in London several times. They do not dissect out the cyst wall but make a communication between it and the subdural space. In this case the cyst was lying close to the hand and arm centers, and to have disssected it out might have injured those centers and caused paralysis of the arm and leg; consequently I simply established a communication between the cyst and subdural space to see if that would not effect a cure. I did not feel safe in dissecting the cyst; I thought it better to have the patient well without the cyst sac than to have the cyst sac under the microscope and the patient paralyzed.

Regular Meeting, held Dec. 2, 1908.

A regular meeting was held Dec. 2, 1908, with the president, Dr. Alfred C. Cotton, in the chair. Dr. Guy L. Hunner, of Baltimore, Md., read a paper, by invitation, entitled "Forcible Dilatation of the Kidney Pelvis as a Means of Diag-

nosis," which was discussed by Gustav Kolischer, Daniel N. Eisendrath, J. Clarence Webster, Emil Ries, and in closing by the essayist. Dr. Carl Beck followed with a paper entitled "Colitis Hemorrhagica Gravis,"* which was illustrated by stereopticon slides. This paper was discussed by James B. Herrick, Fenton B. Turck, Carl Kessler, and in closing by Dr. Beck. On motion of A. Belchain Keyes a rising vote of thanks was extended to Dr. Hunner for his interesting and instructive paper.

DISCUSSION ON THE PAPER OF DR. HUNNER.

Dr. Gustav Kolischer:—The differential diagnosis in kidney troubles is still in its early stages of development, consequently any contribution which will add to our knowledge of the subject will be heartily welcomed, and especially when it comes from somebody with as rich material as the essayist has presented to-night. Of course, I can not cover all the points the author of the paper has made, but I would like to pick out those which I think should be discussed.

As to the technical side of this subject, the first question that arises is, How is it possible to distend the pelvis of the kidney? We know that in a great many cases, after the introduction of the ureteral catheter high up in the kidney, a large part of the urine produced in the kidney will run alongside the outside circumference of the catheter into the bladder. If we inject fluid into the pelvis of the kidney, under pressure this fluid will run back alongside of the ureter. This can be proven if we use colored fluid for the purpose of injection, and if we leave the cystoscope in place while the injection is made. That such a distention of the pelvis of the kidney can be brought about, I have only to say that it has been demonstrated by experiments that the pelvis of the kidney, under certain conditions, can be distended by injecting fluid. For instance, certain operators have injected collargol solution into the pelvis of the kidney, after which an *x*-ray picture has been taken, showing the enlarged or distended kidney pelvis. The explanation is this: Dilation of the pelvis of the kidney is due to a chronic stagnation, either to an obstruction of the ureter or to some folding that acts like a valve near the ureteral orifice. In these cases we are able to distend the kidney by the injection of fluid, because the same obstruction that caused the stagnation will prevent a reflux of the injected fluid. (Here Dr. Kolischer illustrated this point by blackboard diagrams.) Continuing, he said: I doubt very much whether it is possible to dilate the pelvis of the kidney by injections—at least the normal pelvis of the kidney, and I think all experiments that have been made show that we simply distend an already dilated pelvis of the kidney.

As to the diagnostic value of distention of the pelvis of the kidney and of ureteral catheterization in general, it is very often desirable to be in a position to make such a differential diagnosis. For instance, pyelitis in the pregnant woman not infrequently occurs, and in most of these cases the pyelitis occurs in the right kidney. Occasionally, if the ureter is inflamed on that side and the mucosa swollen near the pelvic bone, such a renal attack may be mistaken for one of appendicitis. Now, gynecologists and surgeons coincide with the view that the existence of appendicitis during pregnancy is a strict indication for early operation, and if we are in a position to make such a differential diagnosis, by ureteral catheterization, it would be a great thing; but unfortunately we can not exclude appendicitis always by diagnosticating kidney trouble. Pain or colic in the pelvis of the kidney can almost universally be produced by injections, or by producing stagnation in another way, if we use the occlusive ureteral catheter, that is, one whose eye is covered by condom rubber. If the catheter is introduced into the ureter and inflated with air, then the rubber will form a balloon and block the whole ureter. If you do this for a little while the patient will complain of pain in the kidney on account of the stagnation. At the same time I would mention that the occlusive catheter does away with the objection to the modern cystoscope for catheterizing the ureters. If we introduce such a catheter

1. For text of paper see page 151.

and dilate this balloon we can use this catheter for cleaning out the ureter, we can dilate the ureter below the site of the stone, *ad libitum*, because the rubber will not come off, we can distend it as far as necessary, while the wax attachment can not be changed in size after it has once been inserted into the ureter. In fact, all that I think we can gain by ureteral catherization and by the injection of fluid for the forcible distention of the renal pelvis is this: the urine that is drawn from the catheter will show whether or not there is the formation of pus with or without microbes in the pelvis of the kidney. By injecting fluid into the pelvis of the kidney we can determine whether there is a movable stone in it or not. But distention of the pelvis of the kidney alone is not a criterion of hydronephrosis and intermittent hydronephrosis due to dislocation of the kidney, nor of hydronephrosis due to a kink in the ureter, nor of hydronephrosis due to compression by a tumor or a pregnant uterus. All of those conditions may coexist with appendicitis or with a tumor, etc. The pain that is felt by a patient by distending a dilated pelvis of the kidney or by causing stagnation is not characteristic for kidney trouble.

So far as the diagnosis of strictures of the ureter is concerned, the method mentioned is of doubtful value. For instance, we find the ureter catheter in its passage is caught in one place to-day or the next day, or may be within half an hour afterwards it may be caught at some other point in the ureter. I would not diganose stricture of the ureter if I did not have a chance to pass an olive-tip bougie into the kidney pelvis and in withdrawing it determine the point of constriction. Distending the pelvis of the kidney with fluid and washing it out may lead to error in one therapeutic fact. We know that even the introduction of the ureteral catheter through any obstruction, as, for instance, intermittent hydronephrosis, or in a case of pyelitis of pregnancy, leads to a subsidence of the symptoms and to a clearing up of the urine, which shows that we did not have to do with a microbic infection, otherwise it could not have been cured. We know of cases where the kidney was movable, and after injection the pronounced attacks of colic were typical, yet the disease from which the patient suffered was located in some other organ.

While we are greatly indebted to Dr. Hunner for reporting these cases to-night, yet the field has not been cleared up, and it will take more work and more painstaking observations before we can arrive at any definite conclusions.

Dr. Daniel N. Eisendrath:—This method which Dr. Hunner has given us to-night, and which has received its full development so far in this country in the Johns Hopkins Hospital, is one still in its infancy, and those of us who wish to discuss this subject must do so more from a theoretic standpoint than from the standpoint of experience. From the observations made by Dr. Hunner and from the cases which he has quoted, a field has been opened up which promises to aid abdominal diagnosis, especially in cases of intermittent hydronephrosis and also cases of kinking of the ureter (which give rise to Dittl's crises), without intermitent hydronephrosis. In these cases, if we are able, by passing the ureteral catheter and distending the pelvis, to imitate as closely as possible the pain which this method causes it will certainly be of the greatest aid in diagnosis. These are the cases which come to us frequently with only a history of having had attacks of renal colic, and when on the right side they are the cases which it is almost impossible, without either an exploratory laparotomy or some aid of this kind, to differentiate from appendicitis, especially that variety of appendicitis in which the appendix lies across the ureter, so that swelling of the appendix will give rise to pain which is referred to the ureter and similates ureteral colic.

In regard to the question of palpation of such a renal pelvis, we are dependent altogether upon the excellent observations of Dr. Hunner. If the renal pelvis can be palpated and we can differentiate tumors of the gall-bladder in that way from tumors of the kidney, we certainly ought to welcome this method as of the greatest aid to us in diagnosis.

There is one feature of dilatation of the pelvis of the kidney which I had hoped to hear about, and that is his experience in the therapeutic field. We have

a great many cases not only of pyelitis of pregnancy but pyelitis in man and non-pregnant women, and I would like to know what the results have been in these cases from irrigating the pelvis with antiseptic solutions, in the hope of curing such a pyelitis. If we can achieve anything in some of those cases it will offer us considerable in our therapeutic measures.

Dr. J. Clarence Webster:—It is eleven years since I adopted the air distention method for examining the urinary tract in the female, and I have followed the Johns Hopkins work with very great interest. I do not think anybody who has ever taken up the air distention method in the female will use the old water distention method.

I have been much interested in following the method of diagnosis that has been referred to to-night, as well as in using the wax-tip catheter in the diagnosis of stone in the kidney, and while I have found both satisfactory I must state that they have their limitations. The wax-tip catheter may miss a stone that is in the pelvis of the kidney without any doubt, and I feel that injecting the kidney pelvis through the ureteral catheter we are apt to be misled. I think the point mentioned by Dr. Kolischer is very important. It is easy to produce an attack of pain in the pelvis of the kidney where there is no dilatation whatever. I do not agree with Dr. Kolischer that there is great difficulty in dilating the kidney pelvis with fluid, especially if the patient be in the extreme elevated lithotomy position, which I always adopt. This is much better than the genu-pectoral position in use at the Johns Hopkins. The pain produced in dilating the pelvis may be misleading, for it may cause even the patient to state in some cases that it is similar to the suffering of which she complains, when the real disease may be in the gall-bladder or elsewhere, and we should be very guarded in estimating and in making a diagnosis from the passage of ureteral catheters. However, we must confess that the work is very important, and that we owe to Johns Hopkins a very important means of diagnosis which has helped many of us and has prevented us from making as many of the mistakes made by our teachers. We know perfectly well that gynecologists of the old narrow type, who knew very little about the pelvis, made many mistakes in diagnosis, and referred many conditions to the pelvic organs, which had nothing whatever to do with them, overlooking many conditions in the upper abdomen which we are able to recognize to-day.

I am very much obliged to Dr. Hunner for his admirable paper.

Dr. Emil Ries:—While Dr. Hunner was presenting his paper I thought of all the advantages which might be derived from this method. I have tried it myself, because I have such great difficulty in finding out why some operators have so many floating kidneys to operate on and I have so few. I see many, many movable kidneys, dozens of them, and I do not believe I have operated on more than one dozen in my entire professional life. It seems to me, if this method will aid us in determining which floating kidneys cause trouble and which floating kidneys do not, then it would be a very useful method. A man of the great experience of Israel (Berlin) has come to the conclusion that a floating kidney, unless it produces definite symptoms and certain secondary pathologic conditions, does not require surgical attention, and he has reached that conclusion after having passed through the experience of having patients who were operated on for floating kidney recover from their symptoms, though imperfect local results were obtained. On the other hand, he has had the experience of having patients upon whom operation for floating kidney was perfectly successful, in so far as the kidney was in normal position and in whom the symptoms were not improved at all.

Patients come to us for operation because they are told they have a floating kidney, and they want to know whether they should be operated on or not. I had one such patlient where I was sure she was a neurasthenic; but the neurasthenic may have hydronephrosis at the same time or a carcinoma, and a neurasthenic who has a hydronephrosis or a cancer is just as much entitled to a cure of those conditions as any other patient. But does the kidney make the trouble? My experience is too limited from the cases I have observed and examined by this method to be sure that it helps us in the differentiation. Some of the cases I

have examined in this way have been treated, not all by surgical means, but most of them by dietetic means, and without having anything done to their kidneys have improved; but then we know that dietetic means of themselves are good treatment for floating kidney, for the reason that a patient may gain twenty or thirty pounds in weight, and even though her kidney is still movable, it is less so. I think we will have to examine more cases than Dr. Hunner has told us about before we can arrive at certain definite conclusions in that respect. The work is interesting, and to arrive at a decision as to the necessity of operating on these neurasthenic cases is not easy, and therefore every means of diagnosis should be welcomed.

Dr. Hunner (closing the discussion):—I wish to thank the gentlemen for their kind interest and for the part they have taken in the discussion. I tried to emphasize the point that this is not one of the non-failing methods. There are very few perfect methods in medicine. This method has to be used with judgment, and we should compare our results with the use of this method with those from the use of other methods, and strike as good a mean as we can.

Regarding Dr. Kolisher's remarks about leakage beside the catheter, I do not know how large a catheter he uses. I take it Dr. Kolischer does his work with water distension, and with a Nitze type of instrument, and I believe he is not able to use by this method as large a catheter as we use, one which varies from two millimeters to two and a half. We generally use the larger sizes where we make an injection, and we practically always use colored solution. After catheterizing the kidney the patient is changed from the knee-chest position, either to the side or back, before the injection is made, and there is a glass catheter with rubber tubing leading from the bladder, so that we would know if there was any leakage, and it is the rarest thing that we get leakage. That would not affect the results as to the size of the pelvis of the kidney at all, even if we did get leakage. I cited some cases in which we threw more fluid into the kidney than we withdrew. We simply measured, when getting the size of the kidney, the amount of fluid that runs out of the catheter. When the patient has discomfort we disconnect the apparatus at the end of the catheter, and simply measure what comes back through the catheter. I might say, that in the case of the largest kidney of which you saw an illustration, we went so far as to take sufficient time to make drawings while the patient was in different positions. We clamped the rubber tubing on the end of the catheter through which the injection had been made, left the catheter in for some time, and made drawings in the standing and dorsal positions, and there was no leakage.

I am glad Dr. Kolischer mentioned the use of this helpful method in cases of pyelitis in pregnant women, and I am glad he warned us that even if we do catheterize and find the woman has pus and blood in the kidney, evidences of pyelitis, we may have to operate for a possible appendicitis. I have had that experience myself. We have found this method particularly valuable in such cases, but it is well to know that it may be misleading if depended upon to the exclusion of other evidence.

Dr. Eisendrath asked about the therapeutics of the measure. We find it more helpful in cases of pyelitis in the early months of pregnancy than in any other one class of cases. Catheterization and washing out the pelvis of the kidney with weak solution of nitrate of silver clears up the cases very quickly. We know, however, that most of these cases clear up if we put them to bed and flood them with water. It is only in those which do not react quickly that we resort to the catheter method.

As to the question of not being able to locate a stricture in the ureter, I must differ with Dr. Kolischer. I admit we do occasionally get kinks resisting the passage of the catheter, but if one repeatedly catheterizes the ureter, and always at a certain point gets resistance to the catheter, it is good evidence that there is obstruction. It may not be a stricture or a stone, but it is usually one or the other. I have met such obstruction, apparently due to a kink from inflammation secondary to appendicitis. Again, concerning therapeutics, we find the irrigation

method helpful where the patient has but one kidney, and that the seat of pyelitis or pyelonephrosis. At times such a patient will get along better if the pelvis is treated by washing.

I am glad that Dr. Webster has found air distention so valuable, as there is no question but that we can do more through an ordinary, simple tubular speculum, even though it involves learning how to use a headlight. If we have daylight or even candle-light and are not dependent on electricity, we get all sorts of advantages in examinations and local treatments of the bladder—advantages in passing wax-tipped bougies for purposes of dilatation, and it is more universally applicable for women than the other methods,

Dr. Ries' point of not seeing as many floating kidneys as other men do that need operation is very well taken. I am not one of the enthusiasts about fixing every kidney that is movable. I tried to make it clear that while thirty-two patients out of ninety-two had fixations, these ninety-two were selected cases and did not by any means represent all the floating kidneys I have seen. Many of these fixations were done in association with other operations, and would not have been done at all if the other operations were not necessary. I consider the kidney operation attended with very little risk, and if the other operation is not too severe, where there is definite movable kidney with symptoms I think fixation is the thing. I am a firm believer in the use of the binder or corset first. Many of our patients come from out of the city or state, and the use of the binder or corset can not be closely supervised, and often such patients become operative when similar patients who live in the city and can be watched do not require operation. The fact that so many cases do well with the use of the corset and binder makes one feel that there are many cases of movable kidney in which the symptoms are due to general visceroptosis, and the abdominal binder or corset helps the general condition. When a floating kidney patient has a good result after a kidney fixation done in association with some other operation, or a good result following the use of an abdominal binder or special corset, we can not be too dogmatic in our conclusions concerning the rôle of the kidney in the patient's former ill-health.

DISCUSSION ON THE PAPER OF DR. CARL BECK.

Dr. James B. Herrick:—We are greatly indebted to Dr. Beck for bringing before us the history and specimens of this interesting condition. I am sorry Dr. Beck did not read to you the complete histories of his cases. He kindly let me read his paper before the meeting, and I was greatly impressed with the difficulty we should have in recognizing this condition, or in differentiating it from so-called amebic dysentery. We have no clean-cut type of clinical symptoms that will enable us to recognize amebic dysentery. There are cases in which the onset is very abrupt, the course rapid, the pain severe, the tenesmus, blood, mucus and stools all marked; and the patient often succumbs after a few weeks, with or without accompanying abscess of the liver. There is another group of cases in which, with a rather abrupt onset, the course is more subacute or chronic. In these cases tenesmus, blood and mucus, fever, and emaciation are all present. The patients often pass into a condition in which there is chronic diarrhea; they become anemic, fearfully emaciated, marantic, and the arthritides described by Dr. Beck may be present. The patients may succumb or may improve. Relapses are common.

There is a third group of cases in which the onset is distinctly insidious. The patient can not tell when the trouble began. All symptoms are mild, though the chronic diarrhea is exhausting. Periods of improvement and remission are common; some patients undoubtedly recover spontaneously.

We must remember, too, that while a tropical disease, cases of amebic dysentery are seen here in Chicago, some of them having apparently developed here. Another fact is worth calling to mind, that amebic dysentery may be unattended by the ordinary painful defecation, or tenesmus. The ulcers in some of these cases are not located in the rectum, but higher up in the bowel. I mention these facts to show that there is no typical clinical history of amebic dysentery by

which the disease can be recognized, and one can not, from the clinical symptoms alone, make a positive diagnosis of amebic dysentery or exclude it; therefore, the differential diagnosis of dysentery of the type described by Dr. Beck and amebic dysentery is difficult. One must rely on the examination of the stools for amebæ. The detection of the amebæ is often easy. On the contrary, we may examine the stools repeatedly for amebæ, with negative results. To be of value the examination of the stools must be made with the utmost care. The stool must be fresh and kept warm; and only the moving ameba is to be regarded as the positive evidence of the amebic nature of the colitis, and great importance should attach to the finding of accompanying blood and pus. A few amebæ in the stool do not of themselves necessarily indicate that they are producing pathologic effects. But the difficulties are great. I have at the present time a case of amebic dysentery in the Presbyterian Hospital. The first day the house physician examined the stools with the utmost care and was unable to find amebæ; but the next day, obtaining a stool under apparently the same conditions, he had no difficulty in finding them in abundance. In fact, one field had 14 amebæ in it. A few months ago, in the County Hospital, when a change of service occurred, I asked the house physician what he thought was the matter with a certain patient, and he told me it was a case of chronic diarrhea, where amebic dysentery had been suspected. The stools had been repeatdly examined and amebæ had not been found. The new junior house physician then examined the stools and at the first examination found many amebæ. This goes to show that a negative examination does not by any means exclude amebic dysentery, and that often it is only by repeated examinations of the stools or perhaps of a little mucus obtained by means of a rectal tube that we can find the amebæ.

I was struck, too, with the similarity, to a certain extent, between the pathologic condition, as described by Dr. Beck, and that described by those who have seen many cases of amebic dysentery, with pathologic specimens. The description, for instance, given by Strong, who has had an unusual opportunity of seeing cases in the Philippines, corresponds in many respects to the description given by Dr. Beck. There is the same great thickening of the colon; polypoid-like excrescences are to be seen on the mucous surfaces of the intestines; edema is marked. The specimen, however, which Dr. Beck exhibits does not, I must admit, resemble the amebic dysentery that I have seen.

Dr. Beck mentioned Nehrkorn, who cited thirty-four operated cases collected from the literature, four from Czerny's clinic. Not a few of these cases were definite cases of amebic dysentery, which were so considered by the authors and by Nehrkorn.

We should thank Dr. Beck for bringing to us this contribution because we do not know as yet much about ulcerative and non-ulcerative colitis. There may be some organism—perhaps some animal organism—other than the ameba that is producing this condition in the bowels. We know we may have tuberculous colitis, uremic ulcers, follicular ulcers as well as the amebic ulcer; there is also the bacillary dysentery; but how many more varieties there are we do not know.

As regards operation, if the cases resist the ordinary treatment of rest, diet, and local treatment of the bowel—and I think treatment by quinin is by all odds the best—the surgeon is justified in making an artificial anus which throws out of function the inflamed portion of the bowel, but which does permit of irrigation. I think, however, Dr. Beck will agree with me that we can not be too sanguine as to the results of such treatment. I have seen but few such cases. One of the most striking, and one that proves the truth of my statement, was that of a man who had been treated in Baltimore, Philadelphia and New York for many months by dieting, by irrigation of the bowel; and finally a surgeon in the latter city made an opening into the bowel (cecum), irrigated the bowel, and kept up this treatment for nine months. Finally he allowed the opening to close or it was closed by a surgical operation, as no good had resulted from that plan of treatment. This man was almost a living skeleton; he had had his ups and

downs, and yet his stools were constantly loaded with amebæ. While operation is justifiable and is followed in some cases by good results, one can not promise patients too much from operative measures in this type of cases.

Dr. Fenton B. Turck:—I wish to report briefly an interesting case, similar to those that have been presented here to-night. The case was seen at the Post-graduate Hospital and was suffering from hemorrhagic colitis. We made repeated bacteriologic examinations of the stool and no characteristic flora were found; neither were any protozoa present. Various forms of treatment were tried but without result and an operation was therefore decided upon. A right-sided colostomy was performed. This was followed by gangrene shortly after, and in a few days the patient died. We made macro- and microscopical examination of the bowel and found the entire ascending and transverse colon involved with a similar pathologic condition as Dr. Beck has shown here to-night.

In contrast with the etiology of this form of hemorrhagic colitis, it would seem that amebic colitis is of a somewhat different nature. The recent work of Walker (*Journal of Medical Research*, February, 1908) throws some doubt on the theory that amebæ have a direct causal relation to these forms of colitis. It has been intimated that the ameba carries the colon bacilli into the tissues and even into the general circulation. I have attempted some experiments showing that the colon excretes toxins. It is characteristic for the colon to excrete toxic substances, and if you inject certain substances into the blood they can often be recovered from the colon. The interesting work of Flexner, who injected the toxins of dysentery into the blood, shows that colitis can be promptly produced. Macallum has shown that certain substances, such as strontium, when injected into the blood, are not excreted by the kidney, but by the colon. These facts would indicate that toxins are consstantly excreted by the colon and they may produce various atrophic changes there.

This particular kind of infection does not appear to be such as we see in ordinary colitis; it is not the type in which we have, first, invasion of the mucous membrane; second, of the muscular coat. But it is more a general autolysis accompanied by an infiltration of round cells through the entire wall, quite different from the subacute or acute form of tropical dysentery. During the last year we have carried on some experiments in a case of infection of this kind, with hemorrhages, from China. We found that the infection was not due to the ordinary colon bacilli, nor to pus germs, but to an anaerobe, which has many of the cultural characteristics of the gas bacillus of Welch. By conducting a series of experiments in feeding animals we were able to find, at death, hemorrhages from the transverse colon down to the sigmoid flexure. In other experiments we made injections into the blood and produced similar hemorrhages.

I have recently seen two other cases of hemorrhage from the intestine, in which tropical dysentery could be excluded. The process is a slow, chronic one and has a very different appearance from the ordinary tropical dysentery. In these two cases the entire sigmoid flexure and transverse colon were involved. It is certainly true, as Dr. Beck has pointed out, that these cases are rare. We do not see many of them, but when we do find this form of hemorrhage, I believe the removal of the colon to be the only method that promises relief.

Regular Meeting, held Dec. 9, 1908.

A regular meeting was held Dec. 9, 1908, with the president, Alfred C. Cotton, in the chair. Edward H. Ochsner read a paper entitled "The Effect of Vaccine Therapy on Joint Tuberculosis,"* which was discussed by John Ridlon, Edwin W. Ryerson, William J. Butler, J. F. Hultgen, a member, and in closing by the essayist. Milton R. Barker followed with a paper on "The Motility of the Stomach as a Valuable Factor in the Diagnosis of Gall-stone Disease,"* which was discussed by Fenton B. Turck, A. J. Ochsner, and in closing by the author of the paper. Adjourned.

* For text of papers see pages 137 and 142.

DISCUSSION ON THE PAPER OF DR. OCHSNER.

Dr. John Ridlon:—There are two main points in Dr. Ochsner's paper, and these should be considered separately. First, the question of vaccine therapy and its effects on tuberculous joints. Second, the question of immobilization of tuberculous joints.

Two years ago to-morrow (10th of December) we began vaccine therapy work by Wright's method at the Home for the Destitute and Crippled Children. We finished the work last May. We shall not try it any more. It is not worth while. We treated fifteen cases, and tried to find out all we could in an unprejudiced way from the treatment of them. I examined all the cases personally, and made a prognosis in each case which was recorded as to how the case, in my opinion, would go on under the ordinary routine treatment without vaccine therapy; then I did not examine any of them again for six months. Then without consulting the records made in the beginning, I examined them again, and reported my opinion as to their condition at that time, so that the two records could be compared without prejudice. In the first place, we wanted to find out if by vaccine therapy we could diagnosticate tuberculous joint disease by the opsonic index, and we found we could not. We found that joint disease apparently due to inherited syphilis gave a typical opsonic index of tuberculosis. We believe that an opsonic index of tuberculosis does not necessarily indicate tuberculous joint disease, for it is present in so-called syphilitic joint disease. Furthermore, we have had one case under careful observation, a girl, who had been under my care for four years, with typical tuberculous hip joint disease, who had one active abscess, another abscess nearly healed, and still another that had been healed for some time. She had had three abscesses in the course of four years. She was found to have an opsonic index for tuberculosis persistently and constantly above the normal. There were others of a similar nature, so that it was obvious that tuberculous joint disease does not give a typical tuberculous opsonic index if the patient is in good general physical condition. If the patient is in poor physical condition, the index will be below normal.

We tried to determine whether the vaccine would in any way influence the healing of tuberculous sinuses. It did not influence them, in my opinion, one particle. They did not get well quicker or a bit slower. We tried to determine whether vaccine therapy would influence the healing of already developed, unopened tuberculous abscesses—abscesses that could be made out by palpation, which we expected might heal without opening, or disappear. Instead, they went on more rapidly, filled up, and opened spontaneously. Again, patients who presented no evidence of the development of tuberculous abscesses, and who I did not think would develop such abscesses, did develop them. I am quite convinced that the vaccination of these children with tuberculous vaccine by Wright's method not only hastens the symptoms, but causes the development of these tuberculous abscesses which would not occur otherwise.

As to the increase in the general health of the children, I will say that of the first ten children all of them but one increased in weight from two to eight pounds in the first six months. How much these children would have increased in weight without the vaccine therapy we do not know. The assistant, who had charge of the work, and who was requested to make control weights of other children, did not do so, and we do not know. We do know, however, that all but one increased in weight from two to eight pounds. One did not increase in weight. There were two children who I believed would die within three or six months under the ordinary treatment. These two were included in the first ten. One of them died.

Vaccine therapy necessarily entails a lot of expense and a lot of work. True, it is interesting work, but there is nothing in it for the practitioner.

As to the immobilization of joints and what Dr. Ochsner said about getting better and quicker functional results with the vaccine therapy than without it; it is not so. I am sure it is not so. I am sure it does not make the slightest difference. The question of immobilization is so important that orthopedic sur-

geons for thirty years have all believed and taught that it was the one thing to do, and the only thing to do if we desired to effect a cure in every case we had. All the cases must be immobilized, and when immobilized they would generally do well. With immobilization for two years they often got well with a normal range of motion. Without immobilization they would go on for four or five years and then recover with stiff joints. The general surgeon does not see as many of these cases of tuberculous joint disease as orthopedic men, and we view these cases from a broader standpoint. The orthopedic surgeons of to-day, who are thinking, observing, and unprejudiced men, men who are not riding a hobby on their own braces, or their particular fad in treatment, have learned that all tuberculous joint disease needs to be immobilized for a time; sometimes it is long, sometimes it is short, and sometimes it is longer, and sometimes it is shorter, and that there is no rule that either I or anybody else can lay down by which we can be guided in all cases as to the length of time a joint should be immobilized. We must learn to judge of it by experience; and in the light of experience one will guess right sometimes, and guess wrong at other times. But there comes a time when we no longer need to immobilize a joint; a time when it is better to release it, and by allowing motion within the limits set by the involuntary muscular spasm are doing that joint good; are hastening the cure, though diminishing the range of motion, when compared with the results of long continued immobilization.

As to the protection of these joints from weight-bearing, when the joints of the lower extremity are involved, for a time almost all these joints need to be protected from weight-bearing. Some of them do not, but most of them do. There comes a time when they need no longer be protected from weight-bearing; and when that time arrives, whether it be a week, several months, or five years, the patient will progress more rapidly toward recovery if allowed to walk upon his limb. There are some diseased joints that need to be protected from involuntary muscular spasm by traction for a time; sometimes it is a long and sometimes a short time; then they no longer need traction, and recover more rapidly without it. Then there are a few cases in which traction increases the pain, and is a positive harm.

Dr. Edwin W. Ryerson:—Dr. Ochsner is very optimistic. He showed his optimism last July, when he published a paper in the *Illinois Medical Journal*, which ended something like this: "If the surgeon treats these tuberculous joints by proper immobilization in plaster casts and by properly conducted vaccine treatment under the control of the opsonic index, there are few things more satisfactory to treat and that will give better results than joint tuberculosis." When I read those hopeful words a wave of joy swept over me, and I said to myself, at last we have discovered a way to treat these tuberculous joints. But since then I have read a good many papers about tuberculin vaccine under the control of the opsonic index which were not favorable. The treatment was carried out in some of the Eastern clinics, and the results were not very successful. I think we all must admit that vaccine therapy is the therapy of the future; it is coming, but it is not perfect yet. We have got to discover a vaccine therapy that is universally applicable. In our large hospitals we can not have all our patients under the control of the opsonic index all the time. I usually have from 30 to 40 patients with tuberculous joints in the County Hospital on my service all the time. There are two internes whose time is divided up between my service and another surgical service. How can these men determine daily the opsonic indices of all these patients. It can not be expected of them. The systematic taking of opsonic indices of patients in a large institution like that is out of the question. It can not be done. The gentlemen who are working with the opsonic index and with vaccine therapy must determine, from a large series of observations, the minimum interval after which it will be safe to repeat the dose of tuberculin. This may not be quite as ideal as the present method, but will help somewhat, at least. Now, Dr. Ochsner, in the paper I have referred to and also in this paper, reports one or more cases of secondarily infected joints

which gave as good results by the use of tuberculin vaccines as the ones which were not secondarily infected. This is where I disagree with him. Secondarily infected tuberculous joints are dangerous, not on account of the tubercle bacilli which they contain, but on account of the secondary pus-germs. Here is a solemn warning to the man who treats these tuberculous joints: Leave them alone! Do not open them. Do not get any secondary germs in them. If they are opened and drained they will infallibly get secondary infection in a short time. Where is your tuberculin therapy then? You are now trying to combat infection by the staphylococcus, the streptococcus, or the bacillus pyocyaneus; your tuberculin will not raise the opsonic index for these germs, but only for tubercle bacilli. To cure these secondary infections we should have to use vaccines prepared from all the other germs present. That has been the experience of men who have done this kind of work, although Dr. Ochsner apparently uses only tuberculin. The immobilization therapy is well established for tuberculous joints, as forcibly pointed out by Dr. Ridlon this evening. I have seen many tuberculous joints, treated properly by immobilization, recover perfectly, though in a somewhat longer time than that mentioned in Dr. Ochsner's cases. They did as well by immobilization alone. In my opinion, no tuberculous joint gets well in a year, and I understand these experiments have been going on for only a year. I do not believe tuberculous joints get well as soon as that.

Dr. Ochsner:—I said two years.

Dr. Ryerson:—Some of them get well in two years, but not many of them. The watchword in the treatment of tuberculous joints must be to keep them immobilized as long as necessary, and keep them from becoming secondarily infected. I do not wish to be understood as condemning vaccine therapy in the treatment of secondarily infected joints; but I do not think tuberculin alone will cure them. We must get at the other germs. In this connection Beck's paste is a very useful thing. We must look to the future for a method of vaccine therapy which has not yet been elaborated, for the use of those of us who see such a large number of these tuberculous joints that it is impossible to take and keep track of their opsonic indices.

Dr. William J. Butler:—With reference to vaccine therapy, I had the opportunity recently of listening to Dr. Taylor, of Baltimore, who reported having treated 34 tuberculous joints with tuberculin, and he gave a most favorable report of the results obtained by him, similar to what Dr. Ochsner has given us this evening.

There are some points I wish to speak of in connection with this subject, and one of them is the use of skin vaccination in deciding whether a joint is tuberculous or not. I believe that it is absolutely worthless. We seem to forget that any patient who has had a healed tuberculosis at some time or other may give a reaction to tuberculin vaccination; it does not make any difference how long that may have been, the patient may give a reaction just the same. If the subcutaneous vaccination is sufficiently large to produce a local effect, we may be able to decide from this diagnostic recourse whether a joint lesion is tuberculous or not; but a skin vaccination per se is worthless in deciding whether a given local lesion in a joint or elsewhere is tuberculous or not beyond the period of infancy. It may only be used as a definite diagnostic procedure in early infancy.

As to the opsonic index, it likewise has its limitations in deciding whether a joint lesion or any other local lesion is tuberculous or not. Unless undulations in the immunity wave are occurring as the result of autoinoculations, there is only one way in which the opsonic index may be resorted to so as to decide whether a joint lesion is tuberculous or not, and that is to resort to local means of producing autoinoculation by inducing hyperemia in the tissue around the joint. Under these circumstances the opsonic index may suggest that the local lesion is tuberculous; but a single opsonic index of a patient with a joint lesion may be of no value; in fact, several opsonic indices without this precaution may have no value. It is true, not all joint lesions that are congested by local means will give a typical and classical opsonic variation.

In the treatment of tuberculous lesions, immunizing the organism by vaccination will not affect locally the part in every instance, unless some means is used to determine the blood to the part. Of course, that may seem theoretical to some of you, but Bier's treatment is the best evidence that it is not theoretical, because we know that Bier's treatment does help joint lesions, in all probability the direct result of autoinoculation and in determining blood to the part.

Dr. J. F. Hultgen:—I was very glad to hear what Dr. Ochsner had to say with reference to vaccine therapy in the treatment of tuberculous joints, and I fully agree with Dr. Ryerson that we must look to the future for a reliable method of vaccine-treatment in these cases. Of course, we are wrestling with it to-day as best we can. The treatment of tuberculosis by means of vaccines has not been very satisfactory. It seems to me, as Wright has pointed out, the opsonic index measures only one of four or five different factors in the defensive organization of the system. There is the bactericidal, bacteriolytic action, and the process of agglutination, and yet we use only one method in determining whether there is tuberculosis or not. Wright has not demonstrated that the leucocytes do not take part. He has demonstrated that these opsonic substances are in the serum, and no more. I think all attempts at treatment by vaccination will result more or less in failure, because it is too cumbersone a method and because the sources of error are too manifold. When a patient is recovering from any infectious disease the condition of the blood is an important factor. We have a total count of seven thousand or six thousand, with mononucleosis and eosinophilia. That is a desirable state of the blood, otherwise patients would not recover.

The technic of determining the number and proportion of leucocytes together with the opsonic index is the ideal method, and if we only look for the opsonic index alone we do not do justice to ourselves or to the patient. I find tuberculosis is the same in any part of the body, whether it involves the lungs, bones or glands. I think we should devote more attention to the blood findings in infectious diseases. In tuberculosis we find an increase in the total number of white blood cells when there is secondary infection, but *not* when there is caseation associated with the tuberculous process. In this way one can tell by the blood findings whether tuberculous glands have undergone caseation or not.

Dr. Ochsner (closing the discussion):—I have no quarrel with my orthopedic friends on the general principles which they have stated, in fact, I have incorporated these same principles in my paper, and I have treated practically all cases of joint tuberculosis that have come to me in the last twelve years very much as thus outlined. For the past two years I have used vaccine therapy in addition.

In regard to the question of the opsonic index as a diagnostic measure I can only say that it is of distinct value, but of course not always reliable. It is, however, quite as reliable as most signs and symptoms taken individually. Dr. Ridlon says that he has used vaccine therapy in fifteen cases, has found it wanting and consequently condemns it. I have used it in about 150 cases. I have studied my cases very carefully and I feel convinced that if Dr. Ridlon would follow up his cases with the same care he would soon find that there is much in this treatment for the patient. Of course, it is to be regretted that at present the method is so complicated, but I hope that sooner or later it may be easier of application.

Dr. Ryerson says that the man who has a great many tubercular joints to treat can not keep track of every individual case, particularly in large institutions, where the internes have so many things to do. I do not believe this is a valid objection. While I probably do not have as many cases of joint tuberculosis constantly as has Dr. Ryerson, I usually have more than twenty under treatment, and we do watch the opsonic index carefully enough so as to avoid giving vaccine during a distinct negative phase and to avoid giving excessive doses. We have given several thousand injections of vaccine in the last two years, and so far as I am able to determine we have given it at the wrong time

or have given an overdose only four times.' I have read every available reprint on vaccine therapy that has appeared in the last two years, and I believe I can tell when I read these reprints why certain men have had poor results. Usually it is because they either give too large doses, repeat them too frequently or give them at the wrong time, or because they depend upon vaccine therapy alone, neglecting to make use of all of the well established remedies hitherto employed. You will note that one of the first statements I made in my paper was that, in my opinion, I considered vaccine treatment a valuable adjunct. If a physician is going to depend upon vaccine treatment alone in these cases he is sure to fail in a large per cent. of them, and he ought to fail, but no more so than he would in the treatment of any affection if he depended upon one remedy alone, where many should be used.

With regard to incising a tubercular abscess in the vicinity of a joint I wish to say that I have never deliberately drained and thus secondarily infected a tubercular joint, except during my service as an interne, when I did so on several occasions under the direction of my attending man. I learned my lesson then and have never repeated the offense since. Secondary infection is the worst thing that can possibly happen to any tubercular process. Unfortunately many of these cases come to me already secondarily infected. I then immobilize them with a fenestrated plaster-of-Paris cast, put them under good hygienic conditions, inject them with Beck's bismuth paste, another valuable adjunct, and put them on vaccine treatment. I have a patient, a boy now about 9 years old, who, when he was put on this treatment about two years ago, had twenty sinuses discharging great quantities of pus, pyrexia, chills, rapid pulse, and he had that peculiar cyanosis which is usually indicative of impending dissolution. To-day the sinuses are all healed and he is a fine, healthy, rosy looking boy. I have a little girl with sacroiliac tuberculosis which became secondarily infected two years ago. She came to me about fifteen months ago, discharging large quantities of pus. I placed her on the above treatment, she has exfoliated fourteen sequestra, the discharge of pus has greatly decreased and will undoubtedly cease as soon as the last sequestrum has come out. She weighed only 35 pounds when she came to me. Now she weighs 58, plays out of doors all day and is, except for the small persisting sinus, in perfect health. I could recount many such cases, but time will not permit.

I wish to repeat that I believe that vaccine therapy, when properly applied, will minimize connective tissue formation and that it will favor a process of healing, which will often also occur without its use, but which, so far as I know, has never before been described or even thought of as a possible method of the healing of tubercular processes. I believe it is our duty to utilize this and thereby get much better functional and anatomic results in the great majority of cases suffering from joint tuberculosis.

DISCUSSION ON PAPER OF DR. BARKER.

Dr. Fenton B. Turck:—It is refreshing to see work that bears the stamp of originality, as in the paper we have had presented to us this evening by Dr. Barker. It is refreshing to have an investigator make original investigations in connection with his cases and present his ideas in a scientific manner for discussion. This is what Dr. Barker has done.

One interesting point brought out I wish to refer to, namely, the differential diagnosis between intrinsic and extrinsic gastric disturbance. I remember some time ago a case which was presented before this society as one of gastric neurosis and myasthenia, with identical symptoms as presented by the essayist to-night. I made the statement at that time that I thought it was a gall-stone case, and I think it was afterwards found to be so. Also, two years ago I saw a patient who began to have considerable elevation of temperature at about 3 o'clock in the morning. He had chills, but a blood examination excluded malaria. Examination of the stomach showed that motility was normal, and, although the symptoms pointed to gastric trouble, I made a diagnosis of cholangitis, and at

the Postgraduate Hospital the surgeon opened the abdomen and found infection of the gall ducts. We made cultures for two months afterwards and were able to obtain colonies of colon bacilli. Finally, there was a disappearance of all infection, and the patient recovered from all symptoms.

Those points are so valuable that it is important for us in analyzing such cases to disregard symptoms in many of them. The gastric symptoms are not so important. For instance, there may be loss of appetite at one time, then increased appetite. There may be belching at one time and absence of it at another time, so that the symptomatology we formerly leaned upon is now a very poor crutch. However, the symptoms help us sometimes in investigation.

Dr. Barker made investigations and has now called our attention to the most important function of the stomach, that which concerns motility. The secretions may vary. The secretion may be hyperacid at one time, and hypoacid at another time. At one time it may have a good pepsin reaction; at another time it may have none. There may be yeast sometimes; at other times none. There may be great variations in the secretory function because this depends upon the nervous mechanism. When motility of the stomach does not depend upon nervous mechanism, then we look upon the musculature for the movements of the stomach. When it is not stimulated by any chemical substance or by the nerve supply directly or indirectly, the pyloric orifice is influenced by spasms, opening and closing through a nervous mechanism. But stimulation of the nerves of the stomach does not excite motion. I made experiments with electricity and found that I could not excite the nerves by any method. I injected bouillon and saturated solutions of peptones, and they produced no effect on the motility of the stomach. I made injections into the general circulation of animals and they did not have any effect on general motility. We carried out some experiments by injecting animals with adrenalin, strychnin, belladonna and apomorphin, and none of these drugs in any way, whether given in lethal or physiologic doses, produced any effects on the movements of the stomach. We tried to influence motility by chemical experiments, examining with the *x*-ray and with bismuth, but the results were negative. This is very significant, because we can see motility must be influenced outside of chemical stimulation. We undertook to influence motility of the stomach by mechanical means, and we found that stretching by mechanical means immediately excited peristalsis. With so many millimeters of air pressure, say 30 to 40, we reached the height of mechanical stimulation, the air acting upon the muscle mechanism. Resection of the pneumogastric nerve, and paralysis of the plexus of nerves in the walls of the stomach, did not interfere with the movements of the stomach, which were the same after such resection of nerves and paralysis of the nerve supply. We could only effect these movements through tension acting upon the muscle cells. This led us further to another line of experiments, and brings us to an important point which bears out the contention of the essayist, and that is, if we continue a long process of stretching—in other words, if we fatigue the muscle and allow the stomach to distend and retract again, for a long time, it will go beyond the height of stimulation, to that known as physiologic fatigue; it does not respond any more to physiologic stimulus, and if constant exercise of the muscles with air or water is kept up, there results complete fatigue, and we have an acute dilatation of the stomach. With such dilatation, if we allow the animal food afterwards, and keep the stomach full of food, we get increased chronic dilatation of the stomach, with retention showing in these dogs that there can be no retention without a physiologic pathologic basis for the lack of motility. If we feed these animals for three or four months, we would have chronic dilatation and retention. I find this also to be the case in the human. Where we found we could stretch the stomach with air and it would not respond to stimulants, owing to the fatigue of the gastric muscle, this condition alone would account for the symptoms from which the patients suffered. How shall we establish these facts and make them stand out prominently as diagnostic factors of intrinsic

gastric disturbance? I have protocols showing different forms of dilatation and retention, with the effects on animals, but as my time is limited I will not read them.

I shall now ask the operator to throw a few slides on the screen in order that you may know exactly what we mean by this so-called functional insufficiency of the musculature of the stomach.

Where we have symptoms that are due to intrinsic condition we must expect some gastric disturbance or lesion. In cases in which there is no lack of motility, but in which the motor power is normal, we must look outside of the stomach for disturbance in these cases. I am referring now particularly to the motility of the stomach, and I think if we paid less attention to the symptomatology in these cases and more to the evidences concerning motility, we should accomplish much more than we do at present.

As to the methods by which we make this determination, it is essential to differentiate between a lack of motility and normal motility, and if we find a case in which we have excluded a lack of motility, then we must look to the outside as to the cause of the disturbance. Again, if we find in a case there is persistent lack of motility, then we must differentiate between that due to this condition of the muscle wall and that due to some obstruction to the outlet, and this is determined as follows: We first determine the length of time that retention takes place; second, we test the response of the muscle to stimulation with air by stretching. If it fails to respond to such exercise, the muscle walls are involved, and it becomes a true intragastric disturbance. By distending the stomach with air and using more or less force, the air is expelled from the stomach through a tube, the degree of the expulsive force indicating the degree of power of the muscle wall. We are therefore, by direct measurement, able to determine with reasonable certainty the differentiation between lack of motor power due to muscle weakness and that due to obstruction to the outlet.

As to treatment, I simply wish to say that in these cases of disturbance from lack of motor power of the stomach our best surgeons have learned to recognize that these functional disturbances or physiological defects ought to be corrected and cured permanently by physiologic means. But if the disturbing factor is extrinsic to the stomach, as in the gall-bladder, producing these symptoms, and where there is a total or partial obstruction, as shown by Dr. Barber's cases, and also causing great retention, it should be corrected by surgical means. But the majority of cases of intragastric disturbance need not be treated surgically but should be treated along physiologic lines.

Dr. A. J. Ochsner:—This subject can be stated concisely about as follows: Patients suffering from severe digestive disturbances referred directly to the stomach who have neither a diseased stomach nor indigestion due to the neurotic conditions, are suffering in fact from gallstones. If there is pain upon deep pressure over Mayo Robson's point half way between the end of the ninth rib and the umbilicus and at Boas' point opposite the tenth intercostal space six to eight centimeters to the right of the spine we can be certain that the diagnosis is correct. To this statement we should add the fact that ulcer of the duodenum and appendicitis should be excluded.

Dr. Barker (closing the discussion):—I am grateful for the discussion which my paper has elicited. The burden of my paper is to impart to others that which has been useful to me in making a differential diagnosis in these obscure cases. When one of these cases presents itself to us, the first question for us to solve is, is this an intrinsic gastric lesion or is the lesion extrinsic to the stomach? The best way in which this problem can be solved in my judgment is to test the motility of the stomach wall. If that is found to be normal, in the great majority of cases we will find the lesion to be extrinsic to the stomach. When this is determined we have gone a long way towards making a differential diagnosis. However, there are other diagnostic problems to solve in these cases, after the above question has been settled, chief among which is to differentiate between a true pathology that may be removed surgically and a neurological or psychological condition. This may prove to be a monumental task in some cases.

AUX PLAINES BRANCH—CHICAGO MEDICAL SOCIETY.

REPORT OF A CASE OF POPLITEAL ANEURYSM TREATED BY "OBLITERATIVE ENDOANEURYSMORRHAPHY" MATAS.

CHAS. E. HUMISTON, M.D. AUSTIN, ILL.

Adjunct Professor of Surgery in the University of Illinois; Attending Surgeon to Cook County, St. Anne's and Oak Park Hospitals.

The renewed interest in the Matas operation for aneurysm aroused by the presentation of the "Statistics of Endoaneurysmorrhapy" by Dr. Matas at the 1908 meeting of the American Medical Association leads me to publish the details of this, one of the eighty-five cases reported to June 1, 1908. According to Dr. Matas, this is the only typical operation reported from Illinois.

While the history and physical findings seem fairly typical of aneurysm, the majority of those who saw the patient in the clinic at Cook County Hospital favored the diagnosis of sarcoma. The most valuable point in the diagnosis was in the placing of a constrictor about the thigh above the tumor, after digital compression of the femoral artery had failed to yield any helpful result.

A. F., aged 51, a teamster, was admitted to my service at Cook County Hospital, Jan. 13, 1908, as patient No. 365,466, with the following history: Six weeks previous to his entrance to the hospital he noticed a small swelling in the right popliteal region. It was egg-shaped and pulsated. After doing an unusual amount of walking, the tumor began increasing in size, and this growth was rapid and constant up to the date of admission. There was considerable discomfort and tenderness due to the swelling and edema, but no severe pain. The patient remembers that he was kicked upon this knee by a horse three years ago and that he was disabled for two weeks at that time.

The general examination was negative, except the right lower extremity, which showed a large ovoid tumor occupying the popliteal region, encroaching somewhat upon the calf and extending upward to above the middle of the thigh—the long vertical diameter measured nine inches, and the shorter transverse dimension was six inches. The skin over the tumor was tense, and laterally showed numerous large veins, while posteriorly it was red and inflamed. The tumor was uniformly firm and fixed and was characterized by an expansile pulsation. A bruit could be made out but was not marked. Compression of the femoral artery made no appreciable change in the size or the consistency of the tumor, but later when a constrictor was applied around the thigh close up to the body there was a very perceptible diminution in its volume. The limb below the knee was markedly swollen and edematous. The other limbs were normal.

Operation:—"Internal Obliterative Aneurysmorrhaphy—Matas" was done, Jan. 18, 1908. An incision eight inches long was made extending upward from the level of the knee joint and placed postero-internal to the thigh. Upon dissecting through the fascia and muscles into the sac, about eight ounces of dark fluid blood escaped, and upon opening the sac widely a large blood clot about the size and consistency of an adult brain was scooped out. The tissue and sac posteriorly were deeply discolored, and almost on the point of breaking down. After thoroughly clearing the sac of its contents, at its deepest part was seen two large openings separated by a space of two inches. The upper opening—the larger, easily admitted the forefinger its entire length, while the lower was much smaller. Between these two openings the surface was flat and continuous with the sac wall, and showed the openings of several arterial branches.

The original condition was doubtless a fusiform aneurysm of the popliteal artery which had ruptured, thus leading to the formation of a large false aneurysm whose wall was for the most part made up of connective tissue; the only true arterial coats being a comparatively small area corresponding to the original arterial dilatation, a part of which still persisted, as shown by the dilated opening above.

The inlet and the outlet of the sac, together with the openings of three or four arterial branches, were closed with No. 1 chromic catgut doubled. The sac of the original aneurysm was then infolded upon itself by a triple row of No. 1

doubled catgut sutures, the second and third rows extending upward and obliterating the lumen of the dilated portion of the artery still remaining, that is, the remainder of the original aneurysm. The constrictor was now removed and a compress of hot iodin solution applied, which easily controlled the oozing from the surrounding tissues. The condition of the posterior portion of the false sac and of the overlying structures did not warrant complete closure of the incision, and so a large iodoform gauze drain was inserted.

On the third day the drain was removed and the wound found to be in good condition. The temperature, which at the time of operation was 102, became normal on the fourth day and remained normal thereafter. The circulation below the site of operation was maintained, the foot and toes remaining warm from the first. At this time, eight months after the operation, a careful examination of the patient's limb indicates a complete cure of the aneurysm.

CHRISTIAN COUNTY.

On Thursday, January 21, was held the first meeting of the Christian County Medical Society for the year 1909, and it was a most enjoyable meeting. After the regular business was disposed of Dr. J. C. Myers, of Clinton, the first on the program, was called and read a paper entitled "What a Surgeon Can Do in a Small Town." The paper was very interesting and brought out pointed discussion from several members of the society. This paper was followed by one from Dr. J. J. Connor, of Pana, whose subject was "An Inquiry Into and a Study of the Subconscious Mind." This paper was also interesting and brought forth much discussion and many commendatory remarks from the members present. The paper certainly took much reading and thought in its preparation. The last paper on the program was by Dr. Jesse P. Simpson, whose subject was "Modern Conceptions of Appendicitis—Brief Report of Cases Operated on and Exhibition of Pathological Specimens." This paper deserves much wider publication. While the discussion was limited by the lateness of the hour it was pronounced one of the best papers brought before the society for a long time.

About one-third of the entire membership of the society was present, and, while we have had larger attendance at times, it has been rare that we have had a more enjoyable meeting. Out of fifty-two physicians practicing in the county we have forty-three members, and one-third of the membership was present at this meeting.

The following are the newly elected officers: President, Dr. J. H. Dickerson (re-elected), Taylorville; vice-president, Dr. Jesse P. Simpson, Palmer; secretary-treasurer, Dr. D. D. Barr, Taylorville; delegate to state convention, Dr. J. N. Nelms, Taylorville; alternate, Dr. J. J. Connor, Pana; censors, Dr. C. A. Stokes, Edinburg; Dr. R. C. Danford, Pana; Dr. Chas. M. Seaton, Morrisonville; member legal committee, Dr. J. J. Connor, Pana; committee on program and scientific work, the president and secretary, aided by Dr. Jesse P. Simpson, Palmer; Dr. A. T. Gibson, Morrisonville; Dr. Albert Field, Stonington; Dr. C. A. Stokes, Edinburg; Dr. F. J. Eberspacher, Pana; committee on public health and legislation, Dr. J. H. Miller, Pana.

DOUGLAS COUNTY.

The Douglas County Medical Society held its annual meeting in the Knights of Pythias Hall, at Tuscola, Thursday, Jan. 7, 1909, at 2 p. m. Dr. Martin, the president, called the meeting to order. Other members present: I. W. Hall, W. A. Wiseman and A. O. Carmack, all of Camargo; B. T. McClain, of Atwood; J. L. Reat, W. E. Rice, David T. Hanson and W. C. Blaine, all of Tuscola. The applications of David T. Hanson, of Tuscola, and C. P. Wilson, of Hume, being recommended by the Board of Censors, were read, and they were elected to membership. The secretary reported twenty members in good standing for the year 1908.

The question of adopting a county fee bill was discussed. A resolution was introduced that the secretary send a copy of the fee bill formulated previously before the society to each regular physician in the county, for his approval and urge him to be present at the next regular meeting to discuss the same.

The following resolution, signed by E. S. Allen, H. I. McNeil and W. A. Wiseman, was then presented by the secretary.

"We, the members of the Douglas County Medical Society, having had it brought to our attention that there are certain practicing physicians in this county who place large cards in the local papers, calling themselves specialists, when it is known to us that they are not learned in such specialties as they advertise, and further, by placing short items advertising themselves in the locals of newspapers, and by distributing advertising cards, they take an unfair advantage of local practicing physicians in their locality, who are members in good standing in this society. We believe these methods to be against the best and highest ideals of the profession. We are also convinced that these unethical practitioners receive moral support in securing, in consultation or for surgical operation, the best talent among the members of county and state societies and the American Medical Association. We believe if the members of such medical societies would not hold consultation with, or operate for, these "quacks," that they would soon quit advertising and come into the fold. Therefore be it

Resolved, By the Douglas County Medical Society, that we severely condemn any physician or surgeon in good standing in the County, State or American Medical Association, who consults with or operates with or for such "quacks;" and be it further

Resolved, That any physician or surgeon who aids these "quacks" by consulting with or operating with or for them is, in our opinion, non-ethical and unfit to retain membership in any of the above societies."

The following officers were elected for the ensuing year: President, I. W. Hall, Camargo; vice-president, B. T. McClain, Atwood; secretary-treasurer, W. C. Blaine, Tuscola; board of censors, J. L. Reat and W. E. Rice, Tuscola, and W. A. Wiseman, Camargo. There being no further business, the society adjourned.

W. C. BLAINE, Secretary.

JEFFERSON COUNTY.

The Jefferson County Medical Society met in "special session" on the regular meeting day, at Elks' Hall, Mt. Vernon, Ill., Dec. 23, 1908, at 10:30 a. m. The meeting was called to order by the president, Dr. J. T. Whitlock. The following members were present: Drs. H. L. Gee, T. P. Ward, L. C. Morgan, H. M. Swift, J. W. Hamilton, Chas. Hall, C. J. Poole, A. T. Levick, J. T. Whitlock, Andy Hall and W. H. Gilmore, of Mt. Vernon; Dr. J. W. Wells, of Waltonville; Dr. Simmons, of Texico; Dr. S. A. Thompson, of Ina; Dr. Porker, of Rouge, and Dr. T. A. Clark, of Dix. Mr. Porker, of Rouge, and Mr. Kell, of Mt. Vernon, fourth year medical students, were guests of the society. The minutes of the November meeting were read and approved. The treasurer's report was read. Drs. Leach and Morgan reported the illness of Drs. S. M. Roberson and H. S. Plummer, and the members were invited to call.

The following papers were read: "Ptomaine Poisoning," Dr. H. M. Swift, of Mt. Vernon. Discussed by Drs. Morgan, Levick, Hamilton, Chas. Hall, Ward and Gilmore. Closed by Dr. Swift. "Abdominal Drainage," Dr. C. J. Poole, of Mt. Vernon. Discussed by Drs. Andy Hall, Hamilton and Ward. Closed by Dr. Poole. "Acute Dilation of Stomach Following Child-birth," Dr. T. P. Ward, of Mt. Vernon. Discussed by Drs. Andy Hall and Levick. Closed by Dr. Ward. The meeting was then thrown open for the general report of cases. Six cases of punctured wound of the eyeball with protrusion of iris were reported. Iridectomy was performed in four cases; iris returned to position without operation in one case, and by the use of atropin in one case. Vision almost normal in all in-

stances. Dr. Andy Hall reported a case of cataract, followed by infection from a "hen-peck," making enucleation necessary. Ulceration of cornea was fully discussed.

At 12:30 p. m. the society adjourned to Manion's restaurant, where an old-fashioned turkey dinner was served.

At 2:30 p. m. the society was called to order by the vice-president, Dr. A. T. Levick, and the program continued as follows: "Some Unpleasant Things in the Practice of Medicine," Dr. J. W. Hamilton, of Mt. Vernon. Many members expressed themselves "that Dr. Hamilton had hit the mark." "Obstetrical Accidents," Dr. Andy Hall, of Mt. Vernon. Discussed by Drs. Thompson, Levick, Poole, Hamilton, Gilmore, Simmons and Whitlock. Closed by Dr. Hall.

This meeting was the first of what the society wants to make regular quarterly affairs. The society is expecting Dr. Pettit in April and wants to show what can be done in "Egypt."

MADISON COUNTY.

The Madison County Medical Society met in annual session in the Commercial Building, at Alton, Dec. 4, 1908, at 2 p. m., with the president, Waldo Fisher, in the chair. Members present: Drs. Smith, Engel, Beard, Fisher, T. P. Yerkes, Fouls, Robinson, Dorr, Sims, Burroughs, Pogue, Pfeiffenberger, Hastings, Ihne, Taphorn, J. H. Fiegenbaum, Johnson, Cook, J. W. Scott, Ferguson, H. R. Lemen, W. W. Everett, Haliburton and E. W. Fiegenbaum. Visitors: Drs. Parl Howe and Emma Howe. The minutes of the last meeting were read and approved. An exhaustive written report touching upon the various items of interest on the program of the last state society meeting was made by our state delegate, Dr. S. T. Robinson, which was on motion accepted with a vote of thanks. Resolution presented by Dr. A. J. Ihne, of Fosterburg:

WHEREAS, The publishing by the press of the names of physicians attending upon medical or surgical cases is contrary to the ethical spirit of the members of the society; therefore be it

Resolved, That the secretary request the publishers of all newspapers in Madison county to refrain from mentioning the name or names of the physician or physicians in attendance upon any sick person, so far as it is consistent and practical. Adopted by unanimous vote.

Resolution presented by Dr. W. H. C. Smith, of Godfrey.

Resolved, That the gateway to this county medical society being the gateway to professional standing in the country at large, that the code of ethics of the American Medical Association be strictly adhered to by this society, and its flagrant infringement be deemed sufficient cause for dropping from the roll the name of any physician so engaged, in order that our professional standing may be of the highest. By motion unanimously adopted.

Resolution submitted by Dr. E. C. Ferguson, Edwardsville. Be it

Resolved, By the Madison County Medical Society, that in accepting an election to the annual presidency of this society, the gentleman chosen to such leadership, assumes the duty of delivering to the members thereof at the quarterly meeting following in June, an address or lecture on medicine or surgery, notice of same to be incorporated by the secretary in the usual printed program. Adopted without a dissenting vote.

The committee on resolutions on the death of Dr. L. C. Schuessler presented a report which was adopted, and the secretary requested to send a copy to the family of the deceased.

The election of officers resulted as follows: President, S. T. Robinson, Edwardsville; vice-president, G. Taphorn, Alton; secretary, E. W. Fiegenbaum, Edwardsville; treasurer, J. H. Fiegenbaum, Alton; board of censors, W. H. C. Smith, Godfrey (to serve three years); state delegate, T. L. Foulds, Alton; alternate, J. M. Pfeiffenberger, Alton.

On motion of Dr. W. H. C. Smith, duly seconded, it was ordered that the secretary be instructed to send a copy of a resolution adopted at our meeting on Sept. 6, 1907, in favor of establishing a state colony for the care and treatment of epileptics, to the governor of the state, to our representatives in the legislature and to each member of the committee on appropriations.

A letter from National Organizer Dr. J. N. McCormack, in regard to establishing a National Department of Public Health, was read and the movement was, by a vote of this society, heartily endorsed, and the secretary was instructed to write to our representatives in Congress to urge them to lend their votes and influence to create such a department.

The society then was favored by a very well written paper on "Antitoxin and Its Use," by Dr. Lay G. Burroughs, of Collinsville, which was quite an exhaustive article on the present status of this valuable agent and elicited a lively discussion participated in by a majority of members present and ably led by Dr. E. C. Ferguson, of Edwardsville.

A vote of thanks was tendered to the Alton Retail Merchants Association for the use of their room. Upon invitation by Dr. Sims it was ordered that our next meeting be held in Collinsville on the first Friday in March, 1909. On motion adjourned.

E. W. FIEGENBAUM, Secretary.

ANTITOXIN AND ITS USE.*

L. G. BURROUGHS, M.D., COLLINSVILLE, ILL.

In the early part of the year 1890 two Japanese by the name of Ogata and Jasuhara, who by their clinical experience upon the guinea-pig, conceived the idea of a serum which when taken from the blood of an already infected animal and injected into another, would either protect or prolong the course of the disease. This idea was later taken up by Frankle, who did not develop any satisfactory results, but opened the doorway to Behring, who in the latter part of 1890, by a series of experiments, introduced to the medical profession his new treatment for diphtheria, a serum which being antagonistic to the growth and development of the diphtheria bacillus, was called diphtheria antitoxin.

Notwithstanding the fact, however, that he had demonstrated the virtue of his discovery, it was very seldom used, and then only with fear and uncertainty until nearly 1895, at which time it had been sufficiently tested to prove its virtue, although there yet remains at the present time some physicians who are still skeptical to its true value in the human economy.

I shall not attempt in this paper to discuss the source and method of preparation of the antitoxin, for none of us are particularly concerned in this direction, sufficing to say only, that it is derived from the blood of a horse in which immunity has been established. Concerning the nature and method of action of antitoxin, little is yet known. According to one theory, its action is purely chemical, neutralizing the diphtheria toxins present in the blood, while others claim its action by increasing the resisting powers of the cells of the body to the diphtheria toxins.

In the early days of its use the antitoxin was comparatively weak, and large quantities, as much as 20 c.c., were required for a single dose, and many of the unfavorable results at first reported were doubtless due to the large amount of horse serum which was necessary to inject in order to get a sufficient dose of the antitoxin, while to-day, however, the strength of the antitoxin is very much increased so that possibly 5 or 6 c.c. are sufficient for the average dose. The first use of antitoxin was that of a curative nature, and the idea of establishing immunity or protection to the healthy individual was not considered and established until several years following its employment, and we now recognize antitoxin to have a two-fold nature; first, I might say, in the protection of the healthy, and, second, a curative purpose in the diseased condition.

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*Read before the Madison County Medical Society at Alton, Ill., on Friday, December 4.

Concerning the real and alleged danger from antitoxin where death has followed its administration, there is not sufficient evidence that death was the result of antitoxin, for in some of these cases the autopsy has revealed a status lymphaticus where the shock of so slight a thing as a needle puncture might produce death. While heart paralysis and post palatal paralysis do occur, the life of the patient may be saved by the application of the proper remedy, for it is to be remembered that diphtheria causes death by paralysis, general toxemia or nephritis. No evidence has been adduced as to the danger or injurious effects of the antitoxin which should deter any one from its use.

It was customary in the early days of the serum treatment for the physician to make a bacteriological test of a smear from the child's throat, and if the diagnosis was one of diphtheria he would then advocate the use of the antitoxin, and in this way lose valuable time besides causing himself great anxiety and probably the loss of his patient.

To-day, however, we advocate the early use of the antitoxin, and, as for my opinion, I believe that the physician who practices the early administration of the antitoxin not only practices good medicine but practices economy, for I believe it is economy to be liberal in the use of antitoxin, as the disease is thereby shortened and the life of the patient saved. The investigation by the Chicago Health Department shows the average mortality from diphtheria where antitoxin is used: Upon the first day, 1½ per cent.; upon the second day, 4 per cent.; upon the third day, 5½ per cent.; upon the fourth day, 7¼ per cent., and after the fourth day 14½ per cent. These figures prove the importance of the early use of antitoxin and a still higher per cent. of recoveries may be secured by increased doses and the early administration, for every case of even suspected diphtheria should immediately receive from three to five thousand units.

There is one condition, however, which greatly governs this early administration, for we who practice in rural districts often do not see our patients until the second or possibly the third day of the disease, for the average mother does not counsel her physician until she sees some evidence that her child is getting worse, and finally after the application of a few home remedies without any results, she now summons her physician, when possibly the disease has sufficiently claimed its victim and our case is hopeless.

How can this condition of affairs be changed? The physician must impress upon the patients the importance of early treatment and the disastrous results that may develop if allowed to run on, and I firmly believe that it behooves us, as medical men, to impress upon our people the importance of giving all these so-called sore throats in children prompt and early attention, so that we can practice preventive medicine, rather than curative medicine.

Some of you in your long years of experience have possibly seen cases which upon your first visit were inclined to believe your case to be only of a mild type (a follicular tonsillitis or a membranous condition of little importance), but 24 to 36 hours later you find your patient in the last stages of what you now believe to be diphtheria. Such cases as these occurring in children, particularly in localities where diphtheria is known to be prevalent, should receive the antitoxin early while waiting the bacteriological test, for if the antitoxin does no harm, why not advocate its employment in the child which looks suspicious, so that we can protect the child from any further possibility of danger from that disastrous malady. If you have any doubt in your mind as to whether your case requires the antitoxin I believe firmly that the child should have the advantage of the doubt and be protected.

While we are treating the cases which look to us suspicious we must not neglect the child that has been exposed to the infection, though seemingly to be in good health, may in 24 hours develop true diphtheria. It was not an uncommon event in years past for this infection to seize every child in the same family and those within close proximity. By the administration of a small dose into

the child that has been exposed we can produce a condition of immunity which protects a child against invasion of the bacillus. Proof of the virtue of antitoxin to protect a child against diphtheria can not be denied, for it is a rare thing for more than one child in the same family to become infected during the same epidemic.

No ironclad rule can be followed in dosage; the physician must use his best judgment in that direction.

It is important to recognize that antitoxin can not repair the injury already done by the toxin, for the curative action of antitoxin consists not alone in the neutralizing the circulating toxin but in tearing away the toxin bound to the tissue cells and neutralizing it. A great excess of antitoxin is necessary to effect this. In treating a case of diphtheria it is necessary to give enough antitoxin to completely neutralize the toxin of diphtheria, since laboratory experiments prove conclusively that animals receiving an insufficient amount of antitoxin to neutralize the toxin die as surely as those receiving no antitoxin, and since we possess no means of determining the various amount of toxin that has been secreted by the bacillus, the only safe rule is to give sufficient antitoxin to produce the following changes: The shriveling of the membrane, the odor becoming less fetid, the softening of the glandular swelling, strengthening of the pulse rate and a general amelioration of all symptoms and the patient improved; until all these conditions are observed you have not given sufficient antitoxin and a repeated injection of double the initial dose should be made until the above results are obtained.

In view of the fact that diphtheria attacks the delicate structures of the throat and nasal passages, it is not necessary to go into the varieties and locations of the membrane, sufficing to say, however, that the location of the membrane is an indication of the severity of the attack upon which will somewhat depend the prognosis. A case of laryngeal diphtheria, or membranous croup, as it is sometimes called, is much more serious than the pharyngeal variety, due to the possibility of a laryngeal stenosis which if not relieved by some artificial or mechanical means, invariably terminates fatally. When the membrane covers the tonsils and uvula, profuse discharge from the nose, spots of ecchymosis on the body and extremities; cold, clammy hands and feet, a feeble pulse, and the nauseous odor of diphtheria, and after the administration of ten thousand units of antitoxin in two doses, the condition of the patient improves slightly and that after ten thousand units more have been given there is a marked abatement in the severity of the symptoms, and that when an additional ten thousand units have been given the patient is apparently out of danger and eventually recovers, under such conditions one must be convinced of the importance of giving large doses of antitoxin in the very severe and apparently hopeless cases. In the majority of instances these large doses are not required, particularly if the patients are seen early in the attack, four to six thousand units being generally enough to produce the characteristic effect on the membrane. Before the days of antitoxin there was no method of limiting the extension of the membrane.

Since we recognize antitoxin to possess its influence over any membranous condition, whether it be diphtheritic or some other derivative, we are now justified in using it in conditions produced by the streptococci and their like, producing a condition which is commonly termed a mixed infection, or better known as psudo-diphtheria; even in these cases the antitoxin when administered in sufficient doses has undoubtedly had great influence in that it cuts short their attack and lessens the extent of the membrane. I will refer briefly to a case reported from the Boston City Hospital, in which a child of three years old received in three doses the total of 45,000 units with complete recovery at the end of the fourth day. There are other cases equally interesting in which no doubt many of you are equally as well posted.

In the ordinary cases of diphtheria, such as faucial, tonsillar, etc., when the serum treatment is began early, I believe in administering at least 3,000 units.

If seen later and the membrane extensive, or dispoesd to spread, give at least 5,000 to 8,000 units as the first injection, and repeat within twelve hours if no results are obtained.

In all cases of nasal or laryngeal diphtheria, membranous croup, administer 5,000 units for the initial dose, to be repeated within six hours, unless favorable results follow the first injection. If seen later and the symptoms of asphyxia seem imminent, 10,000 units should promptly be administered and intubation immediately performed.

Upon the results on the mortality following the use of the antitoxin I can not speak from personal experience. In the Boston City Hospital prior to 1895 the death rate was 46 per cent., and in 1900 they had reduced it to 12 per cent. The United States health department in 1902 reported 15,792 cases which received the antitoxin with 1,860 deaths, case fatality of 11.8 per cent., and 722 of these were moribund when injected. If these were deducted the percentage of mortality would be reduced to about 7.5 per cent.. .The average mortality where antitoxin was used in 1902 was 6.48 per cent., and where antitoxin was not used the mortality reached 32.5 per cent.

As to the method of administration, we are familiar with the hypodermic injection, which, when under aseptic condition, is practically void of danger. Any part of the body where the skin is loose may be selected, the best place being between the scapulæ, as the patient can not witness the injection, and is therefore less likely to be frightened. It is well to take this precaution in every instance where hypodermics are given to children, especially in diphtheria, because the heart is always affected by the toxin of the disease, and care must be exercised to prevent excitement, for so slight a thing as a needle puncture may produce death. In recent years some members of the profession recommend it given by the mouth and by the rectum. I have never seen this method used, in three years of hospital experience, and know nothing of the results following this method of administration.

MORGAN COUNTY.

At the annual meeting, held in December, the following officers were chosen: President, Dr. Charles Cole; vice-president, Dr. Edward Bowe; secretary, Dr. George Stacy; treasurer, Dr. A. L. Adams; censor for three years, Dr. H. C. Woltman; alternate delegate, Dr. E. L. Crouch. The retiring president, Dr. David Reid, in reviewing the work of the past year, referred particularly to the more active part which is being taken by physicians in fields of preventive medicine. The yet unfruitful efforts of the profession in Jacksonville to secure a more efficient city health board were alluded to and the work of bettering existing conditions was handed down to future administrations of the society.

The librarian, Dr. Carl E. Black, reported a substantial growth and increasing usefulness of the library during the year. The total number of volumes in the library now is 1,771. A number of valuable donations have been made by members and interested friends since the last report. Other counties are now contemplating the adoption of our index of current medical literature.

Regular Meeting, held Jan. 14, 1909.

The just subsiding epidemic of scarlet fever at the School for the Deaf furnished the subject for discussion, which was considered as follows: "History of Epidemics at School for the Deaf," Dr. W. K. McLaughlin; "Bacteriology of Scarlet Fever," Dr. Grace Dewey; "Otitis Media in Scarlet Fever," Dr. Byron S. Gailey; "Nephritis and Scarlet Fever," Dr. Josephine Milligan. Drs. Pitner, Norbury and Adams discussed the papers offered.

Reports of Cases.—Dr. David Reid reported a series of diphtheria cases and illustrated the effectiveness of prophylactic doses of antitoxin upon others closely associated with those infected. Dr. C. E. Black, a case of sacroiliac dislocation. Dr. J. A. Day, resection of pyloric half of the stomach for carcinoma.

GEORGE STACY, Secretary.

PULASKI COUNTY.

The Pulaski County Medical Society held its regular annual meeting in Mound City Wednesday, Jan. 6, 1909, at 1 p. m., with the president, Dr. Hall Whiteaker in the chair. After the regular routine of business was transacted the old officers were re-elected by acclamation for the ensuing year as follows: President, Dr. Hall Whiteaker, of Mound City; vice-president, Dr. L. F. Robinson of Ullin; secretary-treasurer, Dr. M. L. Winsted of Wetaug; board of censors, Drs. J. F. Hargan, Mound City; W. C. Rife of Villa Ridge, and A. W. Farr of Grand Chain.

The regular programme was then taken up as follows: 1. Transaction of regular business. 2. Address of retiring president, Dr. Hall Whiteaker. 3. Election of officers for the coming year. 4. Paper by Dr. H. C. Brann, of Mounds. Subject: "Why the Young Physician Should Ally Himself With the Medical Societies." General discussion. 5. "Where Should the Young Doctor Locate for the Practice of His Profession." By Dr. C. J. Boswell of Mounds. General discussion. 6. "Shall the Physician Become a Specialist or do General Practice? And When Should He Begin?" By Dr. L. F. Robinson, of Ullin. General discussion. 7. "The Best Way of Collecting the Doctor's Fees." By W. C. Rife, of Villa Ridge. General discussion.

Though some of the writers were absent, the subjects were discussed by all present and the meeting proved a very successful one and quite instructive. Dr. A. W. Farr was much in favor of the society meeting oftener than quarterly. Dr. Will Whiteaker, of Pulaski, made an address in which he advocated for a more moral life among physicians, deploring the habit of drink, and especially that of swearing, common to some members of the profession, and claimed that the doctor should lead a clean life and keep a clean mouth. Dr. Farr endorsed his sentiments warmly. Dr. Hall Whiteaker concluded the meeting with an address in which he invited the society in a body to come to Mound City next summer and have a basket dinner under their fine shade trees at his expense. The society then adjourned until the next quarterly meeting in April.

RANDOLPH COUNTY.

The Randolph County Medical Society met at Red Bud, Ill., Dec. 9, 1908. This was a special meeting, as it was convenient for Dr. J. W. Pettit, president of the State Medical Society, to be present. Chairman Dr. H. L. Gault presided. Those present were: Drs. Seely, Dinges, Smith, Saulanear, Brands, Meyer, Urban and Steele. Dr. H. L. Gault presented a very interesting case of extensive compound fracture of tibia and fibula, treated by sand-box and bichlorid of mercury solution, as follows: "I here present to you a case which demonstrates some of the things that can be done by conservative surgery. This man, Mr. L., is a driver in one of our local mines; his duties are, with the assistance of a mule, to bring the coal in the pit-car to the shaft to be hoisted above. One of these pit cars, when loaded with coal, weighs three tons. On the morning of August 21, while making a trip, the car went upon a switch and the mule upon the main track; this caused the car to leave the track and strike the rib, crushing Mr. L.'s leg between the corner of the car and the coal. The result was this leg (not just as you see it now) but with eight inches of this part extending downward from one and a half inches below the tuberosity of the tibia to about three inches above the ankle joint, this part was pulverized, a series of compound comminuted fractures of both tibia and fibula with six open wounds where the ends of bone protruded and the soft parts pulped. Upon examination at the mine amputation was thought to be the only remedy, but upon a further consideration we thought that as the blood supply was probably good in the part posterior to the bone, and believing the peroneal and posterior-tibial arteries to be unbroken, if some way could be devised to bring and keep the pieces of bone in or near apposition, there might be a possibility of saving the leg. What to use was the question. The dressing must of necessity be one that would allow the

open wounds to be seen and dressed, which excluded the ordinary first dressing, so we devised this, a long fracture-box extending from the middle of thigh with foot-piece and falling sides. The leg was placed in the box upon a piece of muslin, the foot was made fast to the foot-piece, the sides brought up into place and extension made upon the foot-piece, and when the part was extended fully and the fragments brought somewhat into place, sand was packed into the box. Where an angle of the bone was seen, the sand was packed with the fingers until the angle of the bone was seen, the sand was packed with the fingers until the angle was brought into line. The weight of the sand and box was all the extension needed, the wounds were now dressed with bichlorid pack and kept constantly wet with a one to five thousand bichlorid solution. This box dressing was kept upon the leg for forty-two days, when it was found that there was sufficient union to allow it to be placed upon a splint and the man given a pair of crutches, since which time the improvement has been steadily progressing, and, as you see, he will soon be able to walk without assistance. I used sand because it was clean, would not become lumpy or sour from the drainage from my dressing and for the reason that with my fingers I could pack the sand closely about the limb holding the fragments in place."

Dr. Pettit gave a very interesting talk about having a thorough organization of the County Medical Society; how to encourage good meetings and the advantage the doctors would derive. A vote of thanks was tendered Dr. Pettit for the information derived from his talk. This meeting will be the regular quarterly meeting of the society to have been held in January. The following officers were elected for the ensuing year: Chairman, Dr. H. L. Gault; vice-chairman, Dr. A. L. Brands; secretary-treasurer, Dr. A. W. Steele.

Chester was selected for the next quarterly meeting.

ROCK ISLAND COUNTY.

The usual meeting of the Rock Island County Medical Society was held at the Hotel Harms, Rock Island, Ill., Dec. 8, 1908, at 8 p. m. The resignation of Dr. Youtz as secretary was read and the president appointed Dr. Snively to fill the unexpired term. Under clinical cases an interesting specimen of gumma of the brain was presented by Dr. Ostrum. The scientific program was then taken up as follows: A symposium on Pneumonia: "Etiology and Pathology," Dr. Williams; "Symptoms and Diagnosis," Dr. First; "Treatment," Dr. G. L. Eyster. The papers were well received and an interesting discussion followed, in which Drs. Craig, Hollowbush, Wiggins, Lamping and Gardner took part. The business meeting was then taken up. After the allowance of bills, the name of Dr. A. N. Mueller was voted upon and he was unanimously elected to membership.

A motion was made that a committee be appointed to seek to get regular price for contract lodge work. This was tabled. After an extended discussion of the evils of contract lodge work at ridiculous rates such as $2 per year per family, this was selected as most unjust both to the physician and the people, because skillful medical attendance can not be furnished for such a pittance. Therefore, as this was regarded as degrading to the profession and not for the best interest of humanity at large, a motion was made "that the secretary be instructed to send notice to each member that a physician can not do contract lodge work for less than the regular minimum fee (as given in the Rock Island and Moline fee bill) and belong to the Rock Island County Medical Society." This was carried.

A motion was made and carried that a committee be appointed to inquire into contract work in general and to report at the next meeting. Drs. Ludewig, Gardner and Ostrum were appointed. The society then adjourned.

SANGAMON COUNTY.

The regular meeting of the Sangamon County Medical society, called for January 11, was postponed on account of inclement weather. The postponed meeting was held at the Lincoln Library, in Springfield, on Monday evening, January 18.

The president, Dr. Walter Ryan, presided. The general subject for the meeting was diphtheria under antitoxin treatment, the papers presented being designed to draw out a discussion of the various changes in the management and treatment of diphtheria cases since the introduction of antitoxin.

The program included the following subjects: "The Dosage and Administration of Antitoxin," by Dr. R. D. Berry; "The Local Treatment of Diphtheria When Antitoxin Is Used," by Dr. H. H. Tuttle; "The Effect of Antitoxin Upon the Complications of Diphtheria," by Dr. I. W. Metz; "Remarks Upon Intubation and Tracheotomy," by Dr. E. E. Hagler. Drs. Tuttle and Hagler were absent, but the subjects assigned to them were informally discussed by the members present. In the general discussion which followed the presentation of the papers the following members took part: Mrs. L. C. Taylor, S. E. Munson, Charles P. Colby, George N. Kreider, Chas. S. Nelson, Walter Ryan and Geo. T. Palmer, all of Springfield, and Dr. G. E. Lutyens, of Buffalo.

In the discussion there were several most interesting reminiscent talks on the history of diphtheria in Sangamon county. A particularly fatal epidemic of "black diphtheria," which occurred north of Springfield many years ago was described; the members were told of the introduction of intubation and the administration of antitoxin and the numerous difficulties which attended their early use. Dr. G. E. Lutyens, of Buffalo, reported a recent case of diphtheria in which 147,000 units of antitoxin were used before the disease was controlled.

Two interesting pathological specimens were presented by Dr. Charles P. Colby.

GEO. THOS. PALMER, Secretary.

METHODS OF DIAGNOSIS.*

JAMES B. HERRICK, M.D.

Professor of Medicine, Rush Medical College.

CHICAGO

I have thought the subject of methods of diagnosis was an appropriate one to bring before you on this occasion because it was one that would interest a body of medical men embracing general practitioners of city and country, surgeons, internists and specialists; in the second place, because there are certain respects in which, as it seems to me, there are prevalent misconceptions concerning the proper methods of diagnosis, and lastly, because the topic is a timely one and is just now exciting a good deal of interest as witness many magazine articles in different countries, as well as discussions in some of our leading societies. So even at the risk of repeating what may already be called trite, I venture to speak on this topic.

It would be interesting and instructive did time permit, to review the historic development of various methods of diagnosis. We should find in Hippocrates a close observer of his patients and in witness might recall the facies designated by his name; Galen was also a close observer, and in addition paid some attention to morbid anatomy and primitive experiment. We should find the middle ages largely concerned with superstition and respect for authority, viz.: Hippocrates and Galen, rather than with a study of the patient. The English Hippocrates, Sydenham, would be found reviving close clinical observation. And, then, we should find the influence of anatomy and morbid anatomy, with Morgagni as a leader, throwing more and more light on the phenomena of disease. We should have impressed upon us the force of the impetus given by the French school in the early part of the last century, as we read how Corvisart rescued from oblivion Auenbrugger and percussion, and how Lænnec created the art of auscultation, but more important still, interpreted his auscultatory findings in the light of the autopsy. We should read the long roll of

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his successors in skilled physical diagnosis with such names as Skoda, Traube, Oppolzer, Flint, etc. And we should see Richard Bright calling attention to a more careful study of the urine, again with control of the interpretation of clinical findings by those of the autopsy. Virchow would appear with his powerful influence in directing attention to the study of the morbid anatomical changes in disease and his conceptions of the cell, all of which influenced much the methods of diagnosis and brought the microscope more prominently forward as an accessory. And clinical entities and diagnostic signs would spring up here and there, described by the pen of an Addison, a Basedow, a Trousseau, an Argyll-Robertson or a Weir Mitchell. And then, there would be seen bursting in on the medical world the science of bacteriology giving us new conceptions of the causes of disease, new interpretations of their phenomena and adequate explanations for many hitherto mysterious complications. Following directly in its wake comes the diagnosis of disease by detection of causal organisms, the diagnosis by surgical operation made possible because of the application of the principles of asepsis, and the diagnosis by specific serum reactions. Hardly had the medical world gotten its second sight after the blinding glare of bacteriology, before it was again dazzled by the *x*-ray with its possibilities in the way of diagnosis. Instruments and methods of precision have multiplied at such an astonishing rate, chemistry in all its branches, general, physiologic and physical, has announced so many aids to diagnosis, and the function of different organs has been tested in so many and such varied ways that the general practitioner who, thirty years ago, was well informed, fairly gasps for breath as he tries to read his up-to-date medical journals or to follow a discussion in a society and he retires at night disheartened, bewildered and perchance has a nightmare in which megaloblasts are sporting with amino acids and complements while a trypanosome with a tremendously long tail at the end of which is a plasma cell, is working a cryoscopic apparatus from which are issuing Ds and ds in inextricable confusion, while all the time an *x*-ray machine is spitting fire at him and a surgeon with a knife stands ready to do an exploratory operation, calling out "What's his opsonic index?" "Let me know first his opsonic index." No wonder he looks worn and tired and gives way to despair as he tries to grasp it all.

Now no one human being can be expected to be an expert in the use of all the various means of diagnosis. He who tries it soon loses his bearings and is hopelessly lost. Without attempting a philosophic disquisition on the broad topic of methods of diagnosis and without assuming that I have the Ariadne thread to guide all wanderers through this perplexing maze, I wish to bring to your attention a few practical thoughts that may be of service to one in one way and another in another, and may possibly help some wanderer from going astray.

I am led to do this in a measure because, as I have said, I feel that there is in a sense a misconception on the part of the practitioner, of the place played by the laboratory and by so-called instruments and methods of precision in diagnosis, and a certain estrangement of laboratory and bedside that is very unfortunate.

Practitioners untrained in laboratory work are apt to look upon the laboratory as infallible, and as the only scientific branch of medicine because so largely concerned with the exacter branches, e. g., chemistry, physics, anatomy, physiology. But they overlook the fact that much of the laboratory is still empiric. Think for a minute of certain laboratory diagnoses. Take the blood in pernicious anemia, or better still, in acute lymphatic leukemia. What is it that we see? What is the meaning of those large mononuclear cells in most of the acute cases, but of the smaller forms in another, and of their promiscuous mixture in a third case? Why are there few eosinophiles? What is the cause, the significance of all this? We are diagnosing by little more than a mere collation of observations. In just the same way was it learned that there is a difference between the rash of typhoid and typhus, though it took the genius of a

Louis, a Gerhard and others to make this fact generally known. Is it not in both instances largely empirical? Pathology tells us a certain section is from a carcinoma, another from a sarcoma. But what are these in their inherent natures? We know much, the help to diagnosis by a microscopic study in the case of tumors is enormous and invaluable, but is it not still largely empirical, just as our study of the location, manner of spread, consistency, etc., of the tumor on the body is empirical? And so even with the Widal reaction, or the diazo reaction; there is much of the empirical or purely experimental clinging to these laboratory methods. Even the laboratory is still busy collecting facts and instituting comparisons. Generalizations into true laws are still rare.

The practitioner too often overlooks this and places far too great dependence on the result of the laboratory finding because he regards it as more accurate and scientific than it really can be or claims to be. His disappointment is keen, therefore, when the laboratory man honestly declares his inability to make a positive diagnosis, or his resentment is great if the laboratory man on too slim a basis rashly ventures an incorrect diagnosis. Thus there is in some doctors a certain overestimation of the value of the laboratory in diagnosis and in others an unwarranted distrust of the same.

Certain limitations of the laboratory are inherent in the method aside from the personal equation due to errors in judgment or to haste and carelessness on the part of the operator, and should be frankly acknowledged by the laboratory worker and clearly understood by the physician. It is not necessarily a fault of the laboratory if the sputum examination shows no tubercle bacilli, even though the patient has pulmonary tuberculosis. The particular specimen may not contain them. A suspected typhoid perforation is reported from the laboratory as accompanied by only five thousand leucocytes in the blood. It is not the fault of the laboratory that the physician on this finding incorrectly excludes perforation. If the laboratory says the bacteriologic study of the blood shows no micro-organisms and yet the present and subsequent history shows ulcerative endocarditis, pyemia or pneumonia as the case may be, it is not the fault of the laboratory. The trouble is that the method of examination is one that is not infallible; it is largely empirical. And the mistake comes because the practitioner and perhaps the laboratory man do not recognize these limitations or do not differentiate as they should between the interpretation of so-called positive and negative findings. The finding of tubercle bacilli in sputum is a very different thing from failing to find.

The physician should have training enough in the laboratory to understand the difficulties under which work is there done, the possibility of error, the impossibility of always reaching results that are positive. The laboratory worker should have a practical training as a physician, at least a training as a hospital interne so as to realize the difficulties under which the doctor is working, and the important bearing the laboratory report will have on diagnosis. The laboratory worker, the practitioner and the patient should be in close touch. The laboratory man should be a consultant, willing to take his share of the responsibility, but no more than his share of such responsibility and entitled also to his reasonable fee. The final interpretation of the laboratory finding is with the physician. This finding represents one of the symptoms or signs, if you please, in the total symptom-complex presented by the disease; it may be a symptom of slight importance, it may be of overwhelming importance outweighing that offered by anamnesis and examination of the body. But the final summing up should be done by the physician, aided as far as needed by the laboratory worker.

The remedy for this lies, as you see, in better training in our colleges in laboratory work and the continuance of this work by the doctor when in private practice, and it is a pleasure to see that more and more attention is being paid to this. Certain laboratory reactions and technic should be as much the common property of every practitioner as ability to use the stethoscope or the

obstetrical forceps. Ordinary chemical and microscopic examinations of urine, stomach contents, feces; the morphologic study of fresh and stained blood and of exudate; the recognition of commoner bacteria; these are, or should be, no longer the exclusive privileges or duties of the laboratory man. In exceptional cases requiring special skill in interpreting findings, or unusual stains or apparatus, the laboratory expert or laboratory specialist must be consulted just as the ophthalmologist is, when the practitioner is puzzled about the appearance of a retina. So, thorough undergraduate laboratory experience is necessary in order to prevent some of these misconceptions on the part of the practitioner. Then, when in practice there should be not only further study, but as he grows busier and busier he must associate with him some young man fresh from the laboratory, giving him practical experience at the bedside, but letting the young man keep *him* fresh in the advances that have been made since he himself graduated. Several doctors may combine to secure the services of such a young man of exceptional laboratory training, or county or district laboratories might be established; but as I have insisted, the closer the laboratory to the patient the better, and so where possible each doctor should have his own private laboratory, each attending man in the hospital staff have his; at least each department in a hospital and the clinic of each department of a college should have its own laboratory.

There is another tendency that is sometimes seen that is harmful. We doctors are very gullible. We are poor business men. A promoter comes along, shakes a gilded bauble in front of us and like little children, caught by the glitter and tinkling of the tinsel stuff, we grab at it, thinking it pure gold, and our hard-earned money is sunk in a useless patent or in a mining scheme. So as regards new drugs. We believe, or at least practice as though we believed, that what the commercially interested drug house says—provided it is in print and especially if it has the stamp "made in Germany"—is true, and we prescribe a new drug as a cure for this or that disease, never stopping to think whether what we are doing has any basis of reason or common sense, or whether it may not be harmful. And we are inclined to do much the same thing in the way of new methods, instruments and technic pertaining to diagnosis. If it have the laboratory or hospital stamp upon it, particularly one of foreign mark, we are apt to accept it as reliable; it is the latest thing out. Comparatively rarely do we find the commercial bane in such new devices, though occasionally we see it as in new instruments, or new chemical reagents. But usually it is the desire of some laboratory or clinical man to get a little reputation and to get into print early that causes him to make a premature announcement that leads scores or hundreds of innocent practitioners who do not carefully weigh his statements, or test the method in a critical manner, in their laboratories and at the bedside, to accept his statements as true, and then when experience shows them to be false, to grow distrustful and skeptical against the laboratory and the hospital man in general.

I hope I shall not be understood as setting a low value on the laboratory and instruments of precision as aids in diagnosis. Everyone must admit that properly used they are practically indispensable. But I wish right here to make a plea for some of the older methods that ought not, as it seems to me, to be relegated to such an insignificant and minor position as is too often the tendency.

A comprehensive diagnosis implies the use of the most important instrument of all, viz., the brain. It involves a process of reasoning. From long experience the quick-witted physician may reach his conclusion by leaps and bounds and appear to make an intuitive diagnosis; he "sees at a glance" what is the trouble. But even this involves a mental process, rapid though it may be, and it means that there have been many previous similar processes of reasoning in other similar cases. A careful consideration of the past history—anamnesis, the present condition—status præsens, with a complete and detailed physical examination, together with a summing up and linking together of them—an inductive

process—all this is implied in a diagnosis. And, then, a diagnosis, to quote the words of one of our number, is more than a mere labeling of the disease; it is the detection of the disease in this particular individual, its location, extent, intensity, severity, etc. It involves a study of the individual make-up, the condition of other organs than the one chiefly affected, the patient's probable ability to withstand, as shown by family tendency and behavior in other illnesses. Ability to make a diagnosis of this sort implies training in the eliciting of the history, skill in observation of phenomena and trained, erudite touch, ear and eye and even nose. The finding of tubercle bacilli in the sputum may settle the diagnosis of pulmonary tuberculosis, but only the history of the case, the study of the physical signs, the effect upon the blood, pulse, weight and general health, etc., enable the physician to make a *real* diagnosis, to have real knowledge of the disease, to make a well-founded prognosis and to advise a rational therapy.

Have you not noticed the difference in skill of two physicians in the matter of getting a history from patients? One, perhaps with his mind made up as to the nature of the ailment, asks leading questions, checks the patient who volunteers what seems to be needless information and gets either a hodge-podge or a history with essential details omitted. The other in an orderly, quiet way while keeping the patient from wandering into history clearly irrelevant, in a short space of time gets a succinct account of the salient features, with minutest details where they could possibly throw any light on the present illness. He is a lawyer examining the witness who may be a willing or unwilling one anxious to tell too much or eager to conceal unpleasant or disgraceful facts. But unlike the lawyer, he is not an advocate trying to bring out only one side of the case. A certain native tact, an ability to get along with people and to understand human nature here counts for much. The young interne in the hospital one day stood aghast as the patient related to his attending man stories that had an important bearing on the present disease. A hint brought out a history of alcoholism, another an admission of an initial venereal lesion years ago, a brief question the fact of an old pleurisy, etc. Unable to stand it longer the abashed and angered interne turned to the patient and said: "I don't see why you patients haven't more sense. Why didn't you tell me these things when I was writing your history last night? You've told the doctor more in five minutes than you told me in thirty." "Well, sir," said the patient, calmly, "because you never asked me, and besides you never gave me a chance."

And you have seen the patient whose case has been carefully investigated by the recent graduate fresh from the laboratory; a bacteriologic examination has been made; the blood has been studied; so also the stomach contents, the fluid from the chest, the urine; the blood pressure has been estimated and sphygmographic tracings have been taken; the eye-grounds have been looked at, yet the illness is mysterious. Then have you not seen the older man come along, review the carefully written history and give it a deserved compliment, and then deliberately and as an expert palpate the abdomen and demonstrate a mass, describing its location, size, contour, degree of hardness, mobility and its other characteristics? The mystery is solved. All the other findings fit in perfectly with this one and group themselves about it. Laboratory methods and instruments of precision have contributed to the diagnosis, but the central unifying fact was discovered by the old-fashioned *tactus eruditus*. Just as in chemistry a solution saturated, or even super-saturated, may refuse to give up its crystals until inoculated, as the chemists say, by a small crystal of the substance, the mass of facts known concerning our patient refused to show any orderly or comprehensive arrangement until touched by the sensitive hand of the skilled examiner.

The notion that laboratory methods are to render useless and obsolete the old and tried inspection, palpation, percussion and auscultation, is harmful in the extreme. Yet this prevails, and even in our colleges we see this tendency to put in the background physical examination. von Noorden complains that

in Germany many of their graduates are now-a-days poorly grounded in the art of auscultation and percussion, the fundamentals of diagnosis, and urges that this art be not neglected. Because tubercle bacilli may be found in the sputum in pulmonary tuberculosis, we should not rely entirely upon that as the diagnostic criterion, and so be careless in the detection of an apical infiltration, but should be spurred on to greater care in our physical examinations, as now the accuracy is controlled by the sputum examination, and we shall thus learn to be able to interpret more definitely what we feel and hear than ever before. Let the *x*-ray confirm our suspicion of a small aneurism. The next time we shall be bolder in declaring the significance of certain otherwise obscure physical findings. The laboratory method or instrument of precision thus becomes, as it should be, an adjunct of bedside history-taking and physical examination, and does not and should not displace them or lower their dignity.

And let me add another thought. I believe there is in many quarters a tendency to put the study of morbid anatomy too much in the background. Bacteria, lymphocytes, Kjeldahls, electric conductivity of body fluids, free hydrochloric acid, antibodies, plasma cells, opsonins are worthy of most careful study —but after all, the basis of the greater part of our diagnosis is the recognition of deviation from the normal in the location, size, consistency and physical properties, of various organs, together with alteration in function that may attend such pathologic condition. Normal and pathologic anatomy, together with normal and pathologic physiology, are the indispensable essentials for a proper study of the body in these respects, and must in the nature of things remain so. The ability to palpate a large spleen and to identify it as such enlarged organ, will never, I believe, be relegated to a position of unimportance by the discovery of any number of bacteria, or by any blood finding or chemical reaction, though even now some of these methods of examination assist materially in the understanding of the nature of the splenic enlargement, and it is to be hoped many more aids will be discovered.

Neusser, one of the acutest diagnosticians of Europe, a man who fully recognizes the value of the laboratory as an adjunct to clinical medicine, a pupil of Hoppe Seyler, the chemist, says: "Yet even to-day pathologic anatomy still remains the mistress of the art of diagnosis; it is she who determines our decisions at the bedside."*

There is another reason why we must cultivate the art of critical observation and physical examination by the unaided five senses. Over and over again we are called upon to make a quick, on-the-spot decision as to the nature of an illness and its appropriate treatment. The case is one of emergency, time for the laboratory or instrumental diagnosis is not allowed by the remoteness of the laboratory—or the tedious character of the method of examination precludes its employment. The doctor must rely on himself. His training in close study of the phenomena of disease and in physical signs is here his only reliance, and his success or failure depends largely on this previous bedside training. To stop to draw the urine and test for morphin in a case of supposed opium poisoning involves a dangerous delay; the pupils and respiration and other signs must be the guide. The critical study of the twenty-four hour urine, including cryoscopy perhaps, is advisable in a case of uremic coma, but the skilled man is reasonably sure of his diagnosis from a few well-put questions to the friends, the study of the heart and vessels, the odor of the breath with perhaps a glance at the retina, for the ophthalmoscope ought really to be a pocket instrument as well as the stethoscope and hypodermic syringe, and he institutes prompt treatment. A hemorrhage from ruptured tubal pregnancy, obstetrical emergencies, intestinal obstructions, some cases of diphtheria, angina pectoris, these and many other conditions need quick diagnosis. The time is not allowed for detailed study of the blood, the blood pressure, the urine, or the bacteriologic study of exudates.

* Edmund Neusser: Ueber Diagnostik und Therapie in der innere Medicin, Wien, 1893.

This should not be understood as advocating a "snap diagnosis," so called. We ought always to be thorough. As a routine there should be a study of the body in its entirety in every new case. It is an old saying but a very true one, that more mistakes are made through carelessness than through ignorance. The habit of carefully eliciting of the history, thorough examination of all parts of the body, complete laboratory and instrumental investigation will enable us to eliminate a large proportion of our mistakes and to make comprehensive diagnoses. An illustration or two may show what I mean by the latter expression. A patient comes in with history of cough, emaciation and fever and an examination shows an apical consolidation and tubercle bacilli in the sputum. So far so good. But only a routine questioning as to the past history and a study of the urine may show that the pulmonary tuberculosis is a complicating event in a patient with saccharine diabetes. Or we easily make a diagnosis of pneumonia or typhoid, but make a grievous error in prognosis because not recognizing a coexisting nephritis, or a myocarditis. Or we recognize a tabes, but overlook an accompanying aortic leak or thoracic aneurism.

I might dwell upon the diagnosis by operation. It has a legitimate place. Medical men are perhaps prone to resort to it too infrequently and particularly in the way of such simple operative procedures as exploratory punctures of the thoracic cavity, lumbar puncture, the removal of glands, or of pieces of tissue as of the uterus, for microscopic examination, etc., while surgeons are perhaps too easily inclined, from their lack of dread of the operation, to resort to an exploratory or diagnostic operation before an exhaustive study of the case has been made by non-operative means.

But I have already exceeded a reasonable time-limit and must close.

I have endeavored to call your attention, and I fear in a rather disjointed manner, to a few practical features concerning diagnosis. I have tried to recognize the indispensable aid to be derived from the laboratory, to show that the practitioner must have a practical knowledge of laboratory workings, or there is liable to be a greater estrangement between the laboratory and the clinician. I hope I have made clear my belief that the laboratory should be near the bedside, i. e., truly clinical, and that its findings should be viewed as a cardinal symptom, the final decision, with this cardinal symptom given its true weight, being made by the physician, the laboratory worker being his consulted colleague. I have emphasized the fact that while all aid possible should be sought from any sensible, scientific, practical new method or instrument of precision, we should not give up the old time-honored method of clinical observation and the physical examination by the unaided five senses, because these methods have in them elements of truth. And I have tried also to show that a diagnosis is not yet—we hope may never be—a process where all is mechanical and where no logical thinking is necessary, where we shall be, as Weir Mitchell puts it, "dementalized." May I add in conclusion just one word more? You have perhaps had the experience—we all have—of having studied your case as you thought carefully. You have called in some one to aid. He confirms your findings, but goes one step farther than you: he secures the one fact that was lacking, or by rearranging your facts brings order out of chaos. You say he is a genius, he has a native knack in such matters. Now, don't believe it. Only once in a great, great while does the real genius appear. The secret of your colleague's success is explained by that one little word that has been called by one of our most honored medical leaders, William Osler, the master-word in medicine. It is the word "work." It is after all the real secret of successful diagnosis. It is the man who plods in his laboratory, digs at his books, re-examines his patient and again digs, it is the man who works who wins.

UNION COUNTY.

The Union County Medical Society held its annual meeting Wednesday, Dec. 30, 1908, at Anna, Ill., President Dr. D. W. Grear presiding. Eight members responded to roll call. The minutes of the last regular meeting (November 25)

and of the special meeting (December 10) were read and approved. The special meeting was held in honor of Dr. J. W. Pettit, president of the state society, who delivered a splendid address to the local society upon the subject, "Organization." The secretary read his report and stated that during the year since January 1, 1908, the meetings had been changed from quarterly to monthly; that the membership had increased from 14 to 22, with two elected at this meeting (Drs. F. W. Willard and T. J. Rich, both of Anna, Ill.); that while the society had no regular place of meeting at the beginning of the year, it now holds its regular meetings in the science room of Benton Hall of Union Academy, the Executive Board of the school granting the use of any room for it use; that while the expenses of the society during the past year were greater than any previous year, yet the officers kept the expenditures below the receipts, leaving a small balance in the treasury.

The following officers were elected for the ensuing year: Dr. W. E. Lingle, of Cobden, Ill., president; Dr. T. J. Rich, of Anna, Ill., vice-president; Dr. E. Vincent Hale, of Anna, Ill., secretary-treasurer.

WABASH COUNTY.

A special meeting of the Wabash County Medical Society was held Monday, December 21, at 3 p. m., at St. Jerome's Hall, Mt. Carmel. Meeting called to order by Dr. R. J. McMurray. The following members were present: Drs. R. J. McMurray, St. Francisville; C. E. Gilliatt, J. J. McIntosh, Allendale; A. D. French, Linn; J. B. Maxwell, S. W. Schneck, J. C. Utter, P. G. Manley, L. J. Lischer, R. S. Manley and W. E. Muer, Mt. Carmel; visitors: Drs. G. W. Reed, Lancaster; J. E. Inskeep, J. E. Smith and C. E. Martin, Mt. Carmel. F. H. Bimes and Jay Lescher, students of medicine were also present. The object of the meeting was to give Dr. J. W. Pettit, of Ottawa, who, in the capacity of president of the Illinois State Medical Society, is visiting the different counties of the state, the better opportunity to find out the needs of the profession and to impress upon them the need of medical organization and the great benefits to be gained by a perfected organization of the medical fraternity. Dr. Pettit's address was timely and appreciated by all present. The members will certainly be stimulated to better efforts in the interest of the society and will be enabled to secure several new members on the strength of Dr. Pettit's visit. This is indeed a worthy cause which Dr. Pettit has undertaken upon his own responsibility and is deserving the support of the State Society. It is to be hoped that at the next annual meeting of this society the necessary steps will be taken to appropriate a sufficient sum annually to be used by the succeeding presidents in visiting particularly the parts of the state which are in need of the counsel and presence of the chief officer, to promote and stimulate the work of organization, so that none may die. The increased growth will undoubtedly in a great measure take care of the expense.

At 7 o'clock a public meeting was held at the Court House under the auspices of the society. Through the ministerial association the superintendent of the city schools and the daily papers the society was enabled to have a full house and an appreciative audience.

Dr. Pettit gave an address on ""Tuberculosis" and made an impression on the laity which no doubt will bring forth fruitful results.

Dr. R. J. McMurray, President,
Dr. W. E. Mercer, Secretary.

WHITESIDE COUNTY.

The Whiteside County Medical Society held its regular annual meeting in Sterling, Dec. 23, 1908, Dr. C. G. Beard, the president presiding. The minutes of the previous meeting were read and approved. The following were present: Drs. Durkee, Schmalling and Hensinkfeld, of Fulton; Drs. Sullivan, Fitzgerald

and Nowlen, of Morrison; Drs. Dow and Allen, of Rock Falls; Dr. Procter, of Coleta; Dr. Wahl, of Tampico, and Drs. Anthony Parker, J. R. Keefer and Beard, of Sterling. Dr. Broderick, of Sterling, was voted in as a new member. Several of the members present were asked to present a brief sketch of one of their most interesting cases they had had the past year. Dr. Parker reported a case of uremia; Dr. Durkee, a case of arsenious neuritis; Dr. Sullivan, a case of poliomyelitis; Dr. Hensinkfeld, a case of pneumothorax; Dr. Procter, a case of osteomyelitis. All of which were fully discussed by all of the members. Dr. J. F. Keefer made a few remarks relative to some changes in the fee bill, which was discussed from all sides, also bringing out the fact that it had been several years since it had been raised. Dr. Anthony made a motion, which carried, that the president appoint a committee of five who should revise the fee bill and report at the next meeting. Dr. Beard appointed on this committee the following: Dr. Procter, of Coleta, chairman; Drs. Wahl, of Tampico; Keefer, of Sterling; Hensinkfeld, of Fulton, and Fitzgerald, of Morrison.

The following officers were then elected for the ensuing year: Dr. Frank Fitzgerald, president; Dr. E. L. Dow, of Rock Falls, vice-president; Dr. E. C. Sullivan, of Morrison, secretary-treasurer. The meeting then adjourned to meet in February.

WILL COUNTY.

Regular Meeting, held Dec. 10, 1908.

The regular meeting of the Will County Medical Society was held at Hobb's Café, Joliet, Tuesday evening, Dec. 10, 1908. A four course dinner was served at 6:30 o'clock. After dinner Dr. L. Harrison Mettler, of Chicago, spoke for an hour on the subject, "Hysteria," analyzing a number of the more important recent definitions; he demonstrated the modern conception of hysteria to be an insanity of the borderland type—a disease of the ego, that has a definite group of symptoms, and can be diagnosticated as easily as any other disease with distinctive symptoms. He left with the society the idea that a diagnosis of hysteria should be made with exceeding care, with the fact in mind that it is a mental disease and not mere "devilishness." Dr. Woodruff, in discussing the subject further, told of finding the inverted color field in patients whom he believed to be victims of hysteria.

Dr. Wm. Dougall, chairman of the fee bill committee, presented a schedule of fees. The discussion brought out the fact that the schedule as presented gave too much latitude and that a discussion of the matter item by item would be necessary to arrive at an average fee for a working basis. The officers for the year 1909 were elected as follows: President, Dr. Ray B. Leach; vice-president, Dr. Hamilton T. King; secretary-treasurer, Dr. Marion K. Bowles; delegate, Dr. Watson H. Curtis; member of the medico-legal committee, Dr. Wm. Dougall; member of the auxiliary legislative committee, Dr. Wm. Richards. Members present were: Drs. Cushing, Munch, McGann, McBride, Lennon, Le Sage, Stewart, Woodruff, King, Leach, Cohenour, Steen, Bowles, Rich, Brannon, Richards, Dougall, Curtis, Fredericks and Wagner. Guests were Drs. L. Harrison Mettler and Bertha Hurd.

Regular Meeting, held Jan. 12, 1909.

The regular meeting of the Will County Medical Society was held at Hobbs' Café, Tuesday evening, Jan. 12, 1909. Dinner was served at 7:15, Dr. R. B. Leach presiding. After dinner the minutes of the December meeting were read and approved. The president then introduced Dr. Isaac A. Abt, of Chicago, who spoke on "Recent Progress in Nutritional Disorders of Infancy." Discussions and questions followed by Drs. Dougall, Munch, Richards and Wagner. Dr. Abt's speech was comprehensive and valuable and much appreciated.

Dr. Bertha Van Hoosen, of Chicago, then spoke on "Retrodisplacements of the Uterus." She compared the normal uterus to a joint in that it is normally movable and showed how in inflammatory troubles it should be fixed until a cure has been effected, and then it should be again movable, being similar to the treatment of an acute joint inflammation. Any fixation should be temporary. The subject was further discussed by Drs. Ruben, Walsh, Bowles and Ferguson.

The "Fee Bill" was discussed again and the minimum price for obstetrical cases financially able to pay was decided upon.

The meeting adjourned. Twenty-eight members and visitors were present.

Book Notices.

GENERAL SURGERY, A Presentation of the Scientific Principles upon which the Practice of Modern Surgery Is Based. By Enrich Lexer, M.D., Professor of Surgery, University of Königsberg. American Edition, edited by Arthur Dean Bevan, M.D., Professor and Head of the Department of Surgery, Rush Medical College in Affiliation with University of Chicago. An Authorized Translation of the Second German Edition by Dean Lewis, M.D., Assistant Professor of Surgery of Rush Medical College, in Affiliation with the University of Chicago. With 449 Illustrations in the Text, Partly in Color and Two Color Plates. Published by D. Appleton & Co., New York and London, 1908.

A text-book on general surgery, differing from many similar text-books in that it embodies the very latest progress in surgery.

The advance in surgery has been so rapid in the last few years that it has been hard to find a text-book teaching the latest established facts. Drs. Bevan and Lewis, in editing and translating this book, have added many notes, giving their own and other experiences on many important subject, thus making it express the crystallized ideas of America's foremost surgeons.

In Part 1 many good things are said in regard to general anesthetics. The note by the American editor on "Late Poisonous Effects of Anesthetics" shows the danger of chloroform and especially for all long operations. A very concise description of Bier's hyperemic treatment of acute inflammation is given, with a few words of warning against its use in inflammatory infiltrations which have not softened and which are accompanied by fever and have a tendency to extend rapidly. The most approved and latest methods of surgery of the tendons, nerves and blood vessels are given.

In Part 2, under wound infection, blastomycosis is given a terse description and placed in its proper category of diseases. Wright's vaccination treatment is clearly given in five pages and is interesting reading. A summary of its value is clearly stated. The subject of the opsonins is well handled. Crile's method of direct blood transfusion is given in an extract from his own article, tending to show that direct blood transfusion has a definite place in surgery.

One is delighted with the simplicity and conciseness of the book. No space is wasted with useless and obsolete methods. The latest theories, principles and practice of modern surgery are all that are given.

This book ought to be in the hands of every general practitioner and student of general surgery.

THE MELLIN'S FOOD METHOD OF PERCENTAGE FEEDING.

The Mellin's Food Co. of Boston, Mass., has just issued a book of 183 pages, devoted to directions and formulas for the preparation of infant food in connection with the Mellin Compound. Although pertaining to the consideration of this particular food, it has much information along general lines, and can be profitably studied by those practitioners interested in this department. The work will be sent by that company to any practitioner upon request.

NEWS OF THE STATE.

PERSONALS.

Dr. Juliet N. Stevens has returned from a trip to England and Scotland.

Dr. William A. Fisher, Chicago, who has been very ill at his home, is reported to be convalescent.

Dr. George S. Park, formerly of Marshall County, after a continued absence, has again returned to Varna, Ill.

Dr. J. T. McAnally of Carbondale is spending the winter at Mt. Vernon, having temporarily given up his practice.

Dr. Anthony Biankini, of Chicago, has had conferred on him by the Emperor of Austria the order of the Iron Crown, third class.

Dr. W. H. White of Hume, Ill., was obliged to discontinue his practice for a time on account of ill health and is now in Phoenix, Ariz.

Drs. Ludvig Hektoen, George W. Webster and Alice Hamilton, Chicago, have been appointed members of the State Commission to investigate occupational diseases.

Dr. James W. Pettit, Ottawa, and James A. Egan, Springfield, have been appointed by the Governor as members of the State Commission to investigate occupational diseases.

Dr. James W. Pettit, president of the Illinois State Medical Society, addressed the St. Clair County Medical Society at East St. Louis, December 10, on "Medical Organization."

Dr. James A. Sutton, the oldest practitioner of Canton, was presented with a gold-headed cane at the annual meeting of the Canton Physicians' Club Dec. 14. Dr. W. E. Shallenberger, president of the club, made the presentation speech.

NEWS ITEMS.

Smallpox has been reported at Canton, Ill.

Elkville has reported two cases of smallpox.

Scarlet fever has been reported at Galesburg.

Smallpox was reported in Peoria during December.

Scarlet fever is reported in several towns in McHenry County.

Smallpox is reported to be epidemic in the country near Pekin.

Several cases of smallpox have been reported in Mason County.

Scarlet fever was reported at Bloomington the latter part of December, 1908.

Highland, Ill., was quarantined during December on account of an epidemic of scarlet fever.

Health Commissioner Evans, Chicago, has gained a notable victory in securing purified milk for that city.

On January 5 Dr. T. J. Watkins was made president of the staff of Wesley Hospital, Dr. H. M. Richter, vice president, and Dr. Fred Menge, secretary.

The epidemic of smallpox and diphtheria which threatened Browning and vicinity has about abated and those who have been quarantined have been released.

By the will of Dr. James G. Wheeler, Broughton, the James Milliken University, Decatur, will come into possession of his estate, estimated to be worth from $75,000 to $125,000.

It is reported that Dr. Robert Stuart, 5437 State street, while driving his automobile December 28 was run into and his machine wrecked and the physician thrown and badly cut with glass.

Peter Rundberg is said to have been guilty of practicing medicine without a state license and to have been fined $100. The complaining witness was an inspector for the State Board of Health.

Quarantine has been established at the Illinois Eastern Hospital for the Insane as a result of the discovery of five cases of diphtheria in the institution, three among patients and two among nurses.

The Illinois State School for the Deaf, Jacksonville, was put under quarantine by the city and state health authorities Dec. 15, 1908, on account of an epidemic of scarlet fever, of which 110 cases are said to exist.

A jury in Judge Gibbons' court on January 6 returned a verdict in favor of Dr. Henry Schmitz, who was sued for $20,000 by Dr. George Zoeler for the loss of his foot, due to a gunshot wound accidentally inflicted while hunting.

Van Vlissingen, the forger recently convicted from Chicago and now incarcerated in the penitentiary at Joliet, is said to have sunk at least $30,000 in the Physicians' Medical Supply Company, an organization exploiting certain patent medicines.

At a meeting of the Board of Directors of the Proctor Hospital, Peoria, held last evening, arrangements for the medical staff for the ensuing year were made and resulted in the appointment of Drs. Albert Weil, Willis, Ulrich and Corcoran.

A California doctor has abandoned fees and will hereafter serve humanity for love alone. The *Philadelphia Times* fancies his practice will soon grow less, for nothing so destroys a man's confidence in a physician's wares as low fees nor increases it as high fees do.

Active work has been begun by the Maimonides Kosher Hospital Society to raise funds for a hospital for Orthodox Jews, to cost $75,000. They have purchased a site for $6,500 on California avenue, near Rebecca street, facing Douglas Park. The proposed hospital will have a capacity of 100 beds.

E. A. Kamin, an optician, is said to have been fined $100 January 14 for practicing medicine without a license. An inspector of the State Board of Health testified that he had gone to the office of this individual complaining of a sore throat and had been given a prescription, for which he was charged 25 cents.

The new milk law which requires the pasteurization of all milk products than those from cows which have passed the tuberculin test, technically became effective January 1, but complete enforcement will require several months. Meanwhile health officials are proceeding with routine measures to secure wholesome milk.

The latest journalistic applicant for medical favors appears this month in Chicago. Its title is *Hygiene and Diet and How to Live.* It is a monthly periodical devoted to sanitary food, clothing, shelter and how to prolong life, is edited by Dr. Carl H. von Klein and published by the Hygiene and Diet Publishing Company of Chicago.

It has been reported that the school nurses under the Department of Health of Chicago have been retained for work during the year 1909. No appropriation was made for this year until active steps were taken by the department and the public, who set forth the necessity of the nurses' work in the school inspection before the City Council.

The annual report of Cook County Hospital for the fiscal year, 1908, shows that 28,142 patients were admitted to the hospital. At the beginning of the year there were 1,145 patients under treatment, and at the close of the year 1,322. The daily average number of patients during the year was 1,274, and the average daily cost for each patient was 99 cents.

The death rate for the City of Springfield for the year 1908 is estimated at 15 per 100, and during the month of December 9.1 per 1,000. Ten per cent. of deaths were due to tuberculosis. There were a number of cases of smallpox, but not a single death occurred. Five per cent. of deaths were due to accidents, many of which were caused by mine disasters.

All the proposals for the erection of the new Cook County infirmary buildings at Oak Forest were rejected Dec. 11 by the special committee. The amount at the disposal of the members for the erection of the new infirmary buildings and the tuberculosis hospital on the hospital grounds is $2,000,000, while the lowest bid received for the construction of the infirmary alone was $1,898,358.

Plans are being made to open a series of emergency accident relief stations in the downtown district of Chicago, to be known as the Iroquois Memorial Stations. At the meeting between Health Commissioner Evans and Dr. George J. Tobias, president of the Iroquois Memorial Association, plans were discussed for remodeling the city property at 87 Market street so that construction on the first station may be begun in May and turned over to the city on the sixth anniversary of the Iroquois Theater fire.

The new cocain law was declared valid December 16 by the State Supreme Court in the first case referred to it since the act was passed by the legislature. The case at issue was a fine of $500 imposed on Frank and Paul Zito, druggists of Chicago, who were convicted in the lower court of having sold catarrh powders containing cocain. The Zitos contended that the powder was sold by a clerk, but the Supreme Court held the owners responsible. The law holds that cocain must not be sold in "patent medicines" or any form excepting on the prescription of a physician.

The annual meeting of the State Board of Health was held in Springfield January 15. Dr. George W. Webster, Chicago, was reelected president and Dr. James A. Egan, Springfield, secretary and executive officer. The board decided to recommend to the Governor the creation of a state sanitarium for consumptives, provided cities and villages do not take advantage of the power conferred on them of erecting municipal hospitals and further recommended the provision for a state

colony for epileptics. The board also determined to continue the crusade against consumption and to make a thorough investigation into the milk supply of the state to determine whether milk contains the germs of tuberculosis and other communicable diseases.

A judgment of $4,000 was recently entered against Dr. M. L. Harris of Chicago in the Federal Court in favor of a man of Bowling Green, Ohio. It is said that four years ago the man came to Chicago and entered the Policlinic Hospital as a charity patient, where Dr. Harris removed one of his kidneys. After the operation was performed the patient was attended by the regular staff of the hospital and it is claimed that a large piece of gauze was left in the wound. The jury was instructed by Judge Landis to the effect that it made no difference whether or not Dr. Harris personally made the mistake, that he was responsible for anything that happened to the patient, he having been the operating surgeon. A notice of appeal from this judgment has been entered.

The *Bulletin* of the Department of Health of Chicago gives the following statement regarding the work of the department during the year 1908: "The final showing of the work done during the year 1908 by the Department of Health is, on the whole, very satisfactory. The total number of deaths has been less; the death rate has been lower. The improvement has been greatest where it was most needed, namely, in pneumonia, consumption and bronchitis. The department has doubled its work. It has done more for the people. It has spent less money. It has collected more money for the city. Many factors have made this possible. First, the men themselves. We have a few loafers left, but the average of efficiency is higher than that of private employes. The major part of the credit belongs to the wisdom and energy of the heads and their associates in the various bureaus. The credit is generally given the commissioner, but no one knows so well as he that it belongs to the men. Second, the community is fortunate in having a mayor who is firm in his support. Third, a city council which has passed more good health legislation than any other city council anywhere has ever passed in the same length of time. Fourth, loyal support by other departments of the city government, but above all by the police department. Fifth, and the basis of it all, a broader public intelligence and a quickened public conscience. So we have gone through the year, failing and succeeding, erring and acting wisely, mistakes and right actions woven in and out. We hope Chicago is somewhat better to live in as a result of our efforts. For 1909, all working together, we will do the best we can as God gives us strength. Our community is but a child, eternal forces, worldwide in their operation, have caused her birth and growth. Now like an adolescent maiden, she begins to see new relations in life. Introspection is begun. Chicago is finding herself. For the Health Department there is more work to do than we have ever done."

MEDICAL SOCIETY NOTES.

At the thirty-fifth annual meeting of the North Central Illinois Medical Association, held in Princeton December 1 and 2, the following officers were elected: President, Dr. James F. Percy, Galesburg; vice presidents, Drs. Franklin A. Turner, Sandwich, and Alfred E. Owens, Princeton, and secretary-treasurer, Dr. George A. Dicus, Streator.

Aurora physicians met December 17, organized the Aurora Medical Society and elected the following officers: President, Dr. Herman Milbacher; vice president, Dr. Robert A. Windett; secretary-treasury, Dr. William H. Schwingel, and executive committee, Drs. Edward W. Banker, Herman A. Brennecke and William P. Sherman.

The annual meeting and dinner of the Chicago Ophthalmological Society was held January 11. Dr. Thomas Woodruff, president, acted as toast master. The following officers were elected: President, Dr. Frank Allport; vice-president, Dr. William A. Mann; secretary, Dr. Willis O. Nance; councilor, Dr. Paul Guilford, and councilor to the Chicago Medical Society, Dr. Thomas Faith.

At the annual meeting of Effingham County Medical Society, held December 8, Dr. Charles F. Burkenhardt, Effingham (for the last four years secretary of the society), was elected president; Dr. Frank W. Goodsell, Effingham, secretary; Dr. Henry Taphorn, Effingham, treasurer; Dr. George J. L. Haumesser, Shumway, delegate to the state society, and Dr. Joseph B. Walker, Effingham, a member of the medical defense committee.

Resolutions adopted by the Madison County Medical Society on the death of Dr. L. F. Shuessler, of Alton, Ill.

WHEREAS, The Almighty, in his great wisdom, has removed from our midst our fellow member, Dr. L. F. Schuessler, and,

WHEREAS, This society has lost one of its active workers and the community a valuable member of the medical fraternity; be it

Resolved, That this resolution of our sympathy and regard for his professional ability be spread upon the records of this society and a copy of the same be sent to the surviving members of his family and to the ILLINOIS MEDICAL JOURNAL.

H. R. LEMEN,
J. H. FIEGENBAUM.

Dr. Carl E. Black of Jacksonville delivered an address before the members of the Galesburg Medical Society at the Galesburg Club, January 7 on the "Use of Current Medical Literature." The address was of great importance to the members of the society, as they hope to adopt the system of indexing all medical journals at one central point, as is done in Jacksonville, Quincy and other places where the library boards have set aside a room in the public library for their use. A large number of physicians were present to hear Dr. Black, and a committee of three was appointed to take this important matter up and see if it can not be adopted by the Galesburg Medical Society.

The medical profession of Will County held their annual meeting and banquet Tuesday, Dec. 8, 1908, in the Hobb Café, Joliet, Ill. Following the banquet there was a discussion of the fee bill and the election of the following officers: President, Dr. Roy B. Leach; vice-president, Dr. Hamilton T. King; secretary and treasurer (re-elected), Dr. Marion K. Bowles; member board of censors, Dr. V. J. Cohenour; delegate to state convention, to be held at Quincy next May, Dr. Watson H. Curtis of Wilmington; local member State Medicolegal Board, Dr. William Dr. William Richards. The following members were at the banquet: Dougall; member legislative committee, American Medical Association, Drs. F. D. Rich, T. H. Wagner, E. R. Steen, Marion K. Bowles, W. B. Stewart, William Richards, Louisa L. Munch, M. E. McGann, W. O.

McBride, Philip Le Sage, A. J. Lennon, Roy B. Leach, H. T. King, L. J. Frederick, William Dougall, M. W. Cushing, W. H. Curtis, V. J. Cohenour and Dondus Brannon. With the exception of Dr. W. H. Curtis of Wilmington, all who attended are Joliet residents.

The seventh annual banquet of the Aux Plaines Branch of the Chicago Medical Society was held at the First Methodist Church of Austin on Friday evening, Dec. 22, 1908. Covers were laid for sixty-five and every place was filled. Dr. Charles E. Humiston acted as toastmaster and introduced Dr. Henry B. Favill of Chicago, who spoke on the subject, "The Doctor as a Citizen." Dr. Favill said that the physician as a citizen did not enter into the social life of a community as he should; that he was better prepared than other professional men to suggest and present plans for the safeguard of the public against insanitary conditions; that he lived too much within himself and too close to his own pursuits; that living as near to the home as he was forced to do made him of necessity a contributor to the social life of the community. Dr. Favill was followed by Mr. William Moss, attorney at law, of Oak Park. Mr. Moss said between law and medicine there is the best of feeling. He paid a tribute to the medical profession by picturing most graphically the life of the old country doctor, his close relationship to his patients, his influence as a citizen, and finally the tender loss to the community in his death. Rev. R. H. Fortesque Gairdner, of St. Martin's Episcopal Church, spoke on "The Therapeutics of Life." He said we did not smile enough, we did not bring enough joyousness into life. He pictured the close relationship between the pastor and the physician in the home, and defined success as Ruskin would have us to know it. The Weber Quartet furnished the music, and the repeated encores gave proof of the keen enjoyment of those present in their part of the program.

The Physicians' Club held a joint meeting with the Chicago Medical Society, Wednesday evening, Jan. 27, 1909, at the Grand Pacific Hotel. It was one of the best attended and most interesting meetings that the club has ever held. Dr. Henry B. Favill was chairman for the evening. The subject was eugenics and the following program was given: 1. "The Experimental Study of Heredity," illustrated with lantern slides, W. E. Castle, professor of zoology, Harvard University. 2. "Studies of Inheritance in the Evening Primrose," illustrated with lantern slides, R. R. Gates, professor of botany, University of Chicago. 3. "Important Lessons to be Learned from the Breeding of Animals," Eugene Davenport, dean and director College of Agriculture, University of Illinois, Urbana. 4. "Experiments and Observations on the Modification and Control of Inheritance," W. L. Tower, professor of zoology, University of Chicago. 5. Discussion opened by C. O. Whitman, professor of zoology, University of Chicago, and Charles L. Mix. The following explanatory abstract was published in the *Bulletin* of the Chicago Medical Society:

"The part that heredity plays in the development of man should be a matter of deep concern to all of us. The improvement of the races through thoughtful and mature planning, anteconception consideration, so to speak, has

not as yet received at the hands of biologists and sociologists the study and attention that its commanding importance would warrant. Biology has unfolded to us many of Nature's secrets and has established certain definite laws in relation to eugenics that form a substantial foundation for the superstructure yet in the making. Curious it is that man so rarely applies the accepted principles of biological science in the procreation of his offspring, and seldom is a preliminary thought given to anything that would add to its general welfare. Indeed, man is at a distinct disadvantage when compared with such domestic animals as the dog or cat, the horse, cow, sheep or hog. These animals are carefully mated and are bred with the idea of bringing out those qualities most desired in them. While not possessing the intelligence of the human animal, they, at least, can boast of "good" breeding, which unfortunately is denied to many of us. Man is not thoughtfully conceived. He makes his entrance into this sphere in a more or less haphazard way through the more or less haphazard mating of his progenitors. He is the child of chance, and, so to speak, is born, not bred. It is, of course, a recognized fact that morally, mentally or physically, diseased parents usually transmit to their progeny their own abnormal qualities or conditions, or at least endow them with such degenerative cell changes that it remains but a question of time when this inherent morbidity will make itself manifest. It has also been definitely established that consanguinity of parents brings about the births of a very great number of defective children—deaf, dumb and blind, principally. Statistics gathered in this country by Prof. Alexander Graham Bell prove conclusively that such marriages are most frequent and important factors in the production of degeneracy. By way of analogy may be mentioned the poor quality of animal that results from inbreeding, which without doubt will be fully brought out in the discussion. While we duly recognize the unalterable law of Nature that "like begets like," what are we doing to stamp out this great evil of ill breeding in those whom we know to be physically, mentally or otherwise unfit for procreation? What precautions are taken and what control is exercised to prevent the degenerate of whatever nature from begetting his kind? A few of our states have upon their statute books laws forbidding consanguinous marriages so far as first cousins are concerned. These laws, however, are negative through the ability to consummate such marriage in some other state. So, too, has the marriage of those legally declared insane been forbidden, but further than this the state or government fails to dictate. Heredity, evolution and the science of improving the race are assuredly subjects of vast importance—they have to do with the individual of to-day and to-morrow—they are matters that directly affect the community, the state and the nation. Physicians particularly should possess full knowledge of these subjects and should lead in the teaching and application of their accepted principles. We are exceedingly fortunate in having been able to gather together for this meeting so distinguished a group of scientists, each a master in the field of biology. The subject matter for the program was considered of such moment that the directors felt that the medical profession of Chicago would appreciate the opportunity of hearing the latest and best in this field of work. To that end the members of the Chicago Medical Society were invited to meet jointly with the Physicians' Club."

PUBLIC HEALTH.

The public schools of Sycamore and Crystal Lake have been closed on account of scarlet fever. Rigid and thorough isolation of dairies on farms where there are cases has been established at Crystal Lake through the efforts of Dr. Harry D. Hull, Nunda, health officer of McHenry County, who has been appointed special agent of the Chicago Board of Health.

CHANGE IN LOCATION.

Dr. L. W. Fulton of Berlin has removed to Alexander, Ill.

Dr. J. L. Church, of De Kalb, has removed to Geneva, Ill.

Dr. P. K. Andrews, of Atwood, has removed to Clinton, Ind.

Dr. E. M. Minnick has removed from Moline to Kewaunee, Ill.

Dr. H. M. Austin, of Hindsboro, has removed to Lansing, Kan.

Dr. Frederick J. Dudley has removed from Cerro Gordo to Decatur, Ill.

Dr. Joseph A. Pinckard, formerly of Atwood, has returned, taking Dr. Andrews place.

Dr. C. F. Read of Geneva has taken a civil service appointment in the Illinois Eastern Hospital for the Insane at Kankakee.

Dr. David F. Hansen, of Tuscola, graduate of Northwestern University Medical College, 1908, will locate at Arailla, Tex.

NEW INCORPORATIONS.

The Secretary of State at Springfield has licensed the following:

St. Francis Hospital Charity Association, Chicago; medical care and surgical treatment; John J. Weber, R. W. McClintock, Edward Byrnes.

Dr. R. Wehnn's Medicinal Kaolin Mine, Chicago; capital, $250,000; mining and selling kaoline and similar mineral products; incorporators, Robert Wehnn, C. G. Godfrey, O. H. Alexander.

Illinois Orthopedic Sanitarium, Chicago; capital, $300; conduct sanitarium, publish books, magazines, etc.; incorporators, Joseph H. Greer, M.D., Edwin B. Beckwith, M.D., L. M. Ulmer.

MARRIAGES.

HARRY E. MOCK, M.D., to Miss Golda Taylor, both of Chicago, Dec. 25, 1908.

JOHN D. SCOULLER, Jr., M.D., to Miss Edith Husted, both of Pontiac, Ill., Dec. 23, 1908.

WALLACE BOYD RUSSELL, M.D., Chicago, Ill., to Miss Elizabeth Hutchinson, Dyer, Tenn., Dec. 24, 1908.

DEATHS.

MARION F. WILLIAMSON, M.D., died in Joliet, Wednesday, January 7, aged 76 years.

GEORGE GREEN, M.D., of Aurora, Ill., died in Waltham, Mass., Saturday, January 9, aged 74 years.

SAMUEL HOOD, M.D., London, died at his home in Crete, Ill., Feb. 28, 1908, from senile debility, aged 92.

WILLIAM H. SHAW, M.D. (license, Ill.) died at his home in Roscoe, Ill., Dec. 13, 1908, from dropsy, aged 83.

JAMES G. WHEELER, M.D., Cincinnati College of Medicine and Surgery, 1881, of Broughton, Ill.; died in the Evansville (Ind.) Sanitarium, December 18, from cancer of the stomach, aged 61.

WILLIAM FREDERICK DOCKER, M.D., Jefferson Medical College, Philadelphia, 1868, of Shawneetown, Ill., died suddenly at the home of his sister in Minonk, Ill., March 25, from cerebral hemorrhage, aged 62.

JOEL WHITNEY BONNEY, M.D., Missouri Medical College, St. Louis, 1858; formerly of Quincy, Ill., and a member of the State Legislature, but for eight years a resident of Pacific Grove, Cal.; died at the home of his daughter in East San Jose, Cal., Dec. 9, 1908, from pneumonia, aged 82.

MARION F. WILLIAMSON, M.D., Medical College of Ohio, Cincinnati, O., 1865; a member of the American Medical Association and one of the most prominent citizens of Joliet, Ill., died at his home January 6 from pneumonia, aged 75. At his funeral the pallbearers were all members of the Will County Medical Society.

JOHN PITT MATTHEWS, M.D., of Carlinville, Ill., died Jan. 7, 1909, of valvular heart disease, aged 73 years. He graduated at Long Island College Hospital in 1865. He was a charter member of the Macoupin County Medical Society and was always interested in society work; he was president of the Illinois State Medical Society in 1891 and presided over the Springfield meeting of that year; he served as assistant surgeon of the Twenty-second Illinois Volunteer Regiment during the years 1863 and '64; he attended the International Medical Congress at Berlin in 1890; he had been in active practice in Carlinville since the war and had always maintained a high reputation as a successful physician. The Macoupin County Medical Society attended his funeral services in a body and will undoubtedly take proper action at its next regular meeting.